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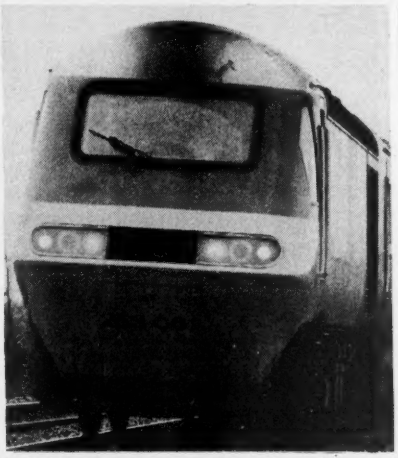
Trade and Industry

22 June 1979

Weekly news magazine of the Departments of Industry and Trade



Britain's High Speed Train, pictured here and on our cover at speed, is an acknowledged world-beater. Our special report this week, beginning after page 540, explains how the British railway industry exploits its technological prowess overseas.

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Trade and Industry this week

HOME

Views sought on anti-competitive practices

Traders and the general public should let the Monopolies and Mergers Commission have their views on two anti-competitive trading practices, Sally Oppenheim, Minister for Consumer Affairs urged on Tuesday.

The two practices are full-line forcing, where dealers are forced to carry a full line of products to keep the supplier's business, and tie-in sales where sales of one product or service are tied to the sales of another.

Under its existing powers of investigation the commission is conducting a general inquiry into these two practices to determine more generally whether they were in the public interest.

'This investigation will be a useful complement to the new powers we will be introducing shortly to deal with such practices on a case by case basis,' Mrs Oppenheim said. 'I would therefore ask anyone who has views on these practices to pass them to the commission, giving examples where possible.'

Anyone wishing to give views should write to the Secretary, Monopolies and Mergers Commission, New Court, 48 Carey Street, London WC2A 2JT.

Trade gap shrinks

Britain had a balance of payments deficit of £75 million in May compared with a deficit of £217 million the previous month. Visible trade – exports and imports – showed a deficit of £185 million against the previous month's £327 million deficit. Exports were worth £3,437 million and imports £3,622 million – both record levels. Figures for April were £3,275 million for exports and £3,602 million for imports.

Invisible earnings – from tourism, shipping, insurance etc were running at estimated monthly surplus of £110 million. The five months January to May show a current account deficit of £1,079 million.

Highland development breaks records

Development activity in the Highlands and Islands of Scotland is running at record levels, according to the thirteenth annual report of the Highlands and Islands Development Board, published on Wednesday.

High levels of investment show every sign of continuing, the report says, and 1978 closed with nearly 40 per cent more applications being dealth with than at the end of 1977. HIDB investment increased by 45 per cent over 1977 while associated private investment rose by almost 100 per cent.

In 1978 the board provided financial assistance to economic and commercial activities in the area to the value of £13.2 million, which board chairman Sir Kenneth Alexander describes as 'a record year not only by this measure but also because of the relationship between the sum and the £23 million private investment which accompanied it'. Another clear sign of accelerating development was the extent to which vacant factory space was taken up in 1978, leading the board to embark upon a substantial programme of advance factory building.

British DC-10s allowed to fly

British registered DC-10 aircraft are being allowed to fly again – subject to new and more stringent inspection proceedures, the Civil Aviation Authority announced on Tuesday.

The authority's decision to reinstate the DC-10's certificate airworthiness has been reached after a technical review of the aircraft's engine pylon and its attachments as well as inspection proceedures developed in consultation with operators. It follows advice from the Airworthiness Requirements Board and similar views expressed on Monday at the European civil aviation conference in Zurich.

The additional checks are to be undertaken at Gatwick airport under CAA supervision.

Public inner-city sites to be released

The government intends to increase the supply of development sites in inner-city areas, Lord Bellwin, Parliamentary Under Secretary of State in the Department of the Environment, told an Institute of Municipal Engineers' conference on Tuesday.

He said that almost threequarters of the vacant and derelict land in these areas was owned by the public sector. But the government would ensure that local authorities, nationalised industries, and the government itself, released land for which there were no plans for early development. He added that this should make a real contribution to unfreezing the land market and would provide a real stimulus to development.

First Sea Harrier handed over to RN

First of the Royal Navy's new Sea Harrier jump-jet fighters was handed over at British Aerospace's Dunsfold flight development centre on Monday. The aircraft was accepted by the First Sea Lord, Admiral Sir Terence Lewin (centre) from Sir Frederick Page, chief executive of British Aerospace (Aircraft Group) in the presence of defence minister Lord Strathcona (left).

Joseph meets Singapore's Prime Minister

Industry secretary Sir Keith Joseph meets Lee Kuan Yew, Prime Minister of Singapore, on Monday. Mr Lee is in the UK to meet the Prime Minster and members of the new government.

Marine disaster exercised on paper

Manchex 79, an Anglo-French marine disaster exercise which envisaged a collision between a ferry and a super-tanker in the Dover Strait area, took place on Tuesday and Wednesday this week.

It was a paper exercise to test the provisions of Mancheplan, the Anglo-French joint maritime contingency plan and covered search and rescue activities as well as pollution control and tanker salvage operations.

British participants in the exercise were deployed in London and at the HM Coastguard Station, St Margaret's Bay, Dover, and all stages of the exercise were carried out with the relevant French authorities.

On Wednesday Parliamentary Under Secretary of State at the Department of Trade Norman Tebbit visited the department's marine division operations room for the British participants as part of his familiarisation with oil pollution operations and reviews of the activities of the Marine Pollution Control Unit.

The exercise was a first for the Marine Pollution Control Team Unit directed by Rear Admiral Michael L. Stacey. Set up at the beginning of this year as part of the department's marine division, the unit is surveying existing regional anti-pollution plans and will relate these to offshore emergency plans of the Ministry of Defence and offshore operators on the continental shelf. It will also relate the plans for dealing with oil and other noxious cargoes to those of neighbouring countries.

EUROPE

Oil supplies main topic at Eurosummit

Current world oil supplies was one of the main topics considered by EEC heads of government at the European council meeting in Strasbourg on Thursday and Friday. The economic consequences of the present prices and supply situation was discussed informally along with other subjects such as the UK's contribution to the EEC budget, the European monetary system and the general economic position of the community.

The council also reviewed the world economic situation in preparation for the world economic summit in Tokyo next week.

EEC energy objectives (see page 535) were the main subject of meetings in London of the economic and social committee's energy section which ended on Thursday. Energy secretary David Howell met committee delegates at a reception on Wednesday.

OVERSEAS

Peking exhibition most successful

The British energy exhibition which closed last weekend was generally considered to be one of the most successful exhibitions ever staged by Britain in China.

With over 360 companies represented on 125 stands the exhibition, organised by the British Overseas Trade Board, was described by the Duke of Kent who with China's Minister for Foreign Trade Li Qiang formally opened it, as by far the most ambitious to be staged by Britain anywhere. Areas covered were oil and gas exploration and processing, coal mining and processing and all types of electrical generation and power transmission equipment.

Thirty years ago, China was thought to be poor in energy resources but it is now realised that the country has ample reserves of fossil fuels for her own needs and with proven coal reserves of 600 billion tons, enough for a thousand years at present extraction rates. As Lord Nelson President of the Sino-British Trade Council, who was exhibition president, pointed out, the development of these energy resources is generally recognised as an essential first step in China's development programme. But Vice Premier Wang Zhen set the guide lines for foreign involvement when he said 'At present China's national economy is undergoing re-adjustment, restructuring, consolidation and improvement so as to lay a firmer foundation for a sustained, proportionate and high-speed development in the future. We must take the road of a Chinese style modernisation in the light of our own characteristics and specific conditions. At the same time we hope to co-operate with friendly countries and learn all their helpful experience in economic reconstruction. The British energy exhibition provides a good opportunity to learn from you.'

At the end of the first seven days over 100 000 people had passed through doors of the Peking exhibition centre. Each morning by opening time a quarter mile queue of men and women, technical experts and students stretched across the large courtyard and out into the street. Half an hour later the 600 exhibitors on the stands were besieged and it was difficult to pick out the ministry buyer and end user from the generally interested layman.

More than 800 initial meetings were arranged by the Sino British Trade Council and, the China Council for the Promotion of International Trade between manufacturers and the Trading Corporations, ministries and research institutes and hundreds of additional meetings took place on stands and in the ministries. Allowing meetings to take place directly with ministries and research institutes is a new development and an indication of a relaxation of the relationship with foreign businessmen. In addition over 60 technical lectures were delivered and a number of visits to industrial installations in the Peking area and a few further afield were arranged.

The general impression of the exhibition was that it had enabled the manufacturers to get closer to the Chinese than ever before. One exhibitor, Jack Hill of Camco, typified the reaction of many. He said 'We have had people on the stand from four different oil fields, one group having travelled 36 hours by train to get here'.

Considering that the exhibition was being held at a time of uncertainty about China's future plans, laying the foundation for future trade was probably the most important aspect of the exhibition and, apart from sales of some equipment that was all that could be hoped for. However, during the exhibition BP was able to announce that it had signed an agreement with China's petroleum company specifying details of a seismic survey over approximately 30 000 km² of the South Yellow Sea.

On other pages

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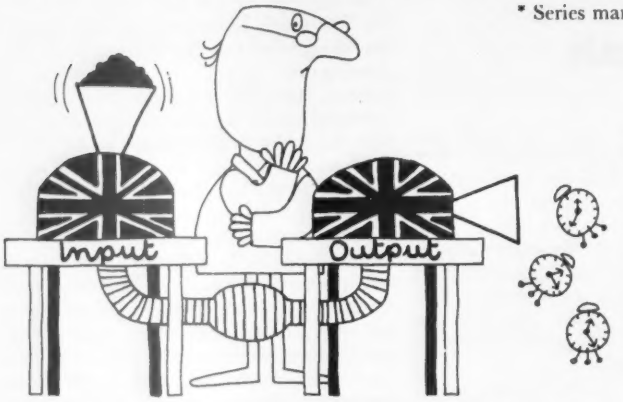
Economic indicators at a glance

* Series marked with an asterisk are not seasonally adjusted.



Output

Gross domestic product. The preliminary estimate based on output data, for Q1 1979 is 107.3 (1975 = 100). This is around 1 per cent lower than in Q4 1978, largely as a result of adverse weather conditions and industrial disputes, especially in the road haulage industry. These factors particularly affected the output of the construction, manufacturing and transport industries and the distributive trades. (Figures for Q1 due to be published on 20 June.)

Index of industrial production. Provisional estimates for the first four months of 1979 suggest that, in total, the underlying level of industrial output is much the same as it was in summer 1978, a small reduction in manufacturing industries' output being broadly offset by an increase in the output of the energy sector. The provisional estimate for April is 115.0.

Consumers' expenditure

Consumers' expenditure, on the second preliminary estimate, rose by about 1 per cent in 1979 Q1 despite a 1½ per cent fall in retail sales. The rise was mainly due to a substantial increase in expenditure on fuel and light and an increase in expenditure on motor vehicles both of which are not covered by the retail sales index. In the latest two quarters, expenditure rose by 1 per cent though it was 4¼ per cent higher than a year earlier.

Retail sales. The provisional index for the volume of retail sales in May was 113½ (1971 = 100). Although this suggests a fall-back from April when sales appear to have increased to make up for trade lost in the first quarter of 1979, the estimate is still significantly above the high level in the fourth quarter 1978. Taking the first five months of the year as a whole, the average volume of sales was about the same as in the fourth quarter 1978.

Prices and costs

Wholesale price index* (provisional) for materials and fuel purchased by manufacturing industry rose by 1½ per cent in May. The most significant contribution was made by higher prices for crude oil, partly the result of a slight depreciation in sterling's value against the dollar. In the latest three months the index increased by 4¾ per cent and was 9 per cent higher than a year earlier. The index for materials, excluding crude oil, purchased by the non-food, drink and tobacco manufacturing industries rose by 5.7 per cent in the three months to May. The index for wholesale output prices rose by 1¼ per cent in May. In the latest three months the index increased by 3¼ per cent and was 9½ per cent higher than the year earlier.

Retail prices index* rose by ¾ per cent in May after the sharp rise of 1¾ per cent in the previous month associated with seasonal increases in rates and rents. Much of the increase in May was due to rises in non-seasonal food prices and motoring costs. The year-on-year increase continued to rise and was 10.3 per cent in May. The budget changes in indirect taxes will effect the index for July and are expected to add directly about 3¾ per cent to the index by the autumn.

Terms of trade. During the first four months of 1979 export prices rose faster than those of imports and the terms of trade index rose by 2 per cent between 1978 Q1 and 1979 Q1. (Figures for May published 19 June).

UK competitiveness, measured by normalised unit labour costs, worsened again in 1978 Q4 as sterling continued to rise.

Investment

Manufacturing industry's volume of fixed investment fell by 4 per cent in 1979 Q1. First quarter figures have dipped for the last few years, interrupting the otherwise steady rise from the trough at the beginning of 1976. In the latest two quarters taken together, the volume was virtually unchanged.

Distributive and service industries' volume of fixed investment (excluding shipping) rose by about 3 per cent in 1979 Q1.

The DoI investment intentions survey carried out in April/May confirms the results of the previous surveys which indicated a further increase in 1979 in the volume of investment by both manufacturing industry and the distributive and service industries (excluding shipping). It also supports the previous expectation that the upward trend in investment will continue in 1980 for the distributive and service industries but probably not for manufacturing. The volume of investment by manufacturing, which rose by 7 per cent in 1977 and 8 per cent in 1978, is expected to increase by 2 to 5 per cent in 1979 (against 4 to 8 per cent expected by the December survey), with possibly a slight fall in 1980. Investment by the distribu-

'Greenfield' plant opened in NI for Spillers new project

Opening this new £1 million factory in Dungannon in Northern Ireland on Tuesday, chairman of Spillers Ltd, Michael Vernon said, 'This is an exciting occasion as it is the first project we have undertaken since our withdrawal from breadmaking last year'. The plant covers about 3 acres and the building has 20 000 square feet of floor space. It will operate under the banner of Gland Supplies Ltd, which collects, prepares and freezes animal glands, meat offal and liquors used by the pharmaceutical industry for vaccines and medicines, and by pet food manufacturers. The factory will employ 40 people, with the prospect of more later.

tive and service industries (excluding shipping) is expected to rise in 1979 for the fourth consecutive year. The latest information indicates that the outcome is likely to be in the range 5 to 7 per cent, with a further increase of similar magnitude in 1980.

Incomes

Real personal disposable income (RPDI) rose by 1½ per cent in 1978 Q4 giving a large increase of 6½ per cent in 1978 as a whole. The rise in 1978 followed falls in the previous three years.

Average gross earnings.* Average gross earnings (new series) fell back a little in March but when the distorting effects of back-pay are removed there was a further rise from 13½ per cent in February to 14¼ per cent in March. The latest figures still suggest that earnings have been increasing in this pay round at much the same rate as last year. (Figures for April due to be published 20 June.)

Labour

Unemployment (UK, excluding school leavers) fell by 21 000 during May to 1 306 400 (5.4 per cent of all employees). There has been a fall of 13 000 in the level since December thus continuing, albeit at a more gentle pace, the fall that began early in 1978.

Unfilled vacancies (mainly for adults) notified to employment offices rose by 12 000 to 257 300 in May, and in the latest three months were 23 per cent higher than a year earlier.

Companies

Gross trading profits of industrial and commercial companies, excluding those engaged in North Sea oil and gas activities and net of stock appreciation, rose by 14 per cent in 1978, much less than in 1977.

Liquidity of the (large) industrial and commercial companies replying to the DoI's company liquidity survey fell appreciably in the first quarter 1979, bringing their net current assets and liquidity ratio to the lowest levels since mid-1977. Liquidity has now fallen for three consecutive quarters, after rising strongly from the third quarter 1977 to the second quarter 1978.

Net borrowing requirement of industrial and commercial companies' was much the same in 1978 as in 1977.

Balance of payments

Current account of the balance of payments in the four months to April was in substantial deficit by £1,004 million. Figures have been considerably distorted by the effects of the road haulage dispute and the industrial action at Customs and Excise. There was a deficit of £1,508 million on visible trade in the four months January to April (£377 million per month) compared with a deficit of £406 million (£68 million per month) in the second half of 1978. The projected surplus on invisibles in the first four months of this year of £504 million contains a lower figure for April reflecting higher net contributions to the EEC in the second quarter. Despite a large current account deficit in the first quarter 1979, the inflows on the capital account, reflecting confidence in sterling, led to a surplus of £685 million on current and capital accounts combined. (Figures for May published 19 June.)

UK official reserves* (revalued in March at market related rates) rose by $65 million in May. Had it not been for a net repayment of $238 million by the public sector under the exchange cover scheme there would have been an increase in the reserves of $303 million. At the end of May the reserves stood at $21,532 million.

Volume of trade. In the first four months of the year the volume of exports on average was 8 per cent below the level of the second half of 1978. Part of the fall was attributable to the industrial disputes affecting the figures and the rest is accounted for by the loss of export markets in Iran and Nigeria. On the same comparison imports increased by 3 per cent. About half the increase was attributable to road vehicles with the rest spread amongst commodity groups other than oil. (Figures for May published 19 June.)

DoT's survey of short-term export prospects, based on replies received from 57 large exporting companies, suggests that the total volume of UK visible exports will rise by about 2 per cent in 1979, a slower growth rate than the 3½ per cent in 1978. A fall in volume of 2 to 3 per cent is expected in the first half 1979, due to the lower shipments to Iran and Nigeria, followed by a rise of 5 to 6 per cent in the second half 1979. Respondents expect the year-on-year rise in export prices to be 13 per cent in the rest of 1979 compared with 9½ per cent in the first quarter and around 4 per cent in 1978.

Exchange rate

Effective sterling exchange* rate index rose strongly during the week to 68.2 by the close on Thursday 14 June (December 1971 = 100).

Exchange rates

The bank note rates of exchange in London on 15 June are given below. Supplied by Thomas Cook Bankers Ltd, the rates are intended as a guide only and are subject to fluctuation. OECD countries are shown in bold.

		You buy at	You sell at
Afghanistan	Afghani	115	150
Andorra	(See France/ Spain)	—	—
Antigua	E. Caribbean dollar	5.42	5.62
Argentina	Peso	2 500	3 100
Australia	**Dollar**	**1.88**	**1.94**
Austria	**Schilling**	**29.00**	**31.00**
Bahamas	Dollar	2.10	2.25
Bahrain	Dinar	0.815	0.85
Barbados	Dollar	3.96	4.29
Belgium	**Franc**	**65.25**	**68.75**
Belize	Dollar	4.20	4.77
Benin	CFA	465	485
Bermuda	Dollar	2.05	2.19
Bolivia	Peso	42	52
Botswana	Pula	2.10	2.30
Brazil	Cruzeiro	57	67
Brunei	Dollar	4.66	4.86
Cameroon	CFA	465	485
Canada	**Dollar**	**2.425**	**2.495**
Chile	Peso	70	82
China	Ranimbi Yuan	Refer	Refer
Colombia	Peso	76	88
Costa Rica	Colon	18	21
Cyprus	Pound	0.72	0.76
Denmark	**Krone**	**11.38**	**11.88**
Dominica	E. Caribbean dollar	5.42	5.62
Ecuador	Sucre	53	63
Egypt	Pound	1.56	1.66
Eire	**Pound**	**1.04**	**1.08**
Fiji	Dollar	1.77	1.85
Finland	**Markka**	**8.30**	**8.65**
France	**Franc**	**9.10**	**9.50**
Germany, FR of	**Deutschmark**	**3.94**	**4.16**
Gibraltar	Pound	1.00	1.05
Greece	**Drachma**	**75.50**	**80.50**
Grenada	E. Caribbean dollar	5.42	5.62
Guyana	Dollar	9.25	Refer
Hong Kong	Dollar	10.56	11.01
Iceland	**Krona**	**787**	**817**
Indonesia	Rupiah	1 200	1 600
Iran	Rial	210	Refer
Iraq	Dinar	0.755	0.805
Israel	Pound	45	50
Italy (20 000 and smaller)	**Lira**	**1 750**	**1 835**
Japan	**Yen**	**460**	**485**
Jordan	Dinar	0.63	0.67
Korea	Won	1 200	1 600
Kuwait	Dinar	0.59	0.62
Lebanon	Livre	6.95	7.45
Liberia (see USA)		—	—
Libya	Dinar	1.10	1.33
Luxembourg (see Belgium)	**Franc**	**65.25**	**68.75**
Madeira (see Portugal)	Escudo	75.50	80.50
Malaysia	Dollar	4.64	4.86
Malta	Pound	0.735	0.765
Mauritius	Rupee	11.88	13.75
Mexico	Peso	42	52
Monaco (see France)	Franc	—	—
Netherlands	**Guilder**	**4.32**	**4.53**
New Zealand	**Dollar**	**1.96**	**2.05**
Nigeria	Naira	2.35	Refer
Norway	**Krone**	**10.76**	**11.21**
Oman	Rial	0.73	0.775
Pakistan	Rupee	21	29
Peru	Sol.	420	550
Philippines	Piso	15.00	18.00
Portugal	**Escudo**	**98.50**	**103.50**
Qatar	Rial	7.93	8.28
Saudi Arabia	Rial	7.16	7.52
Seychelles	Rupee	12.87	13.35
Sierra Leone	Leone	2.25	2.50
Singapore	Dollar	4.54	4.78
South Africa	Rand	2.10	2.30
Spain	**Peseta**	**135.75**	**142.75**
Sweden	**Krona**	**9.06**	**9.46**
Switzerland	**Franc**	**3.57**	**3.79**
Syria	Pound	8.90	9.40
Taiwan	Dollar	85	105
Thailand	Baht	40	46
Trinidad and Tobago	Dollar	5.30	6.40
Turkey	**Lira**	**90.00**	**94.00**
Uganda	Shilling	39	Refer
United Arab Emirates	Dirham	8.07	8.42
USA	**Dollar**	**2.09**	**2.13**
Venezuela	Bolivar	8.45	9.95
Yemen Arab Republic	Rial	12	15
Yugoslavia	Dinar	40.50	42.50
Zambia	Kwacha	4.25	Refer

Where more than one rate applies to a currency, the rate given is that for small denomination notes.

Finance

Public sector borrowing requirement (PSBR) fell to £2.6 billion in the fourth quarter of the financial year 1978-79. The PSBR for the full financial year amounted to £9.2 billion.

Domestic credit expansion was quite large again in May at £0.9 billion. The central government borrowing requirement was lower than in April, but sales of government debt were also lower and a sizeable amount of certificates of tax deposit was redeemed. Bank lending to the private sector continued at a high level.

Sterling M3 rose by £0.6 billion (1½ per cent), rather less than DCE, implying some external outflow from the private sector. In the seven months since mid-October it has risen by about 7½ per cent, 13 per cent at an annual rate. The new guidelines for £M3 from mid-June 1979 to mid-April 1980 are 7 to 11 per cent at an annual rate.

Bank of England minimum lending rate (MLR) – 14 per cent, effective from 13 June.

More information

For a backrun of figures for some of these indicators see 'The economy: selected indicators', page 443. Inquiries on any of these indicators should be addressed to Economics and Statistics Division 4B, Departments of Industry and Trade, Room 173, 1 Victoria Street, London SW1H 0ET, tel. 01-215 3453.

Home news

Regional development grants – deferment of payment from 12 June

Following the budget announcement of a four-month deferment in the payment of regional development grants, Sir Keith Joseph, Secretary of State for Industry, has announced that the deferment applies to all applications made after 12 June. The department will accept as being in time applications posted to the regional development grants offices on or before that date.

Applications will be examined in the usual way. When the office is satisfied about the amount of grant payable, the applicant will be notified and told that, provided no material change occurs in his eligibility for grant, payment will be made in four months' time. This four-month period will not be used to resolve questions arising from applications. No requests for priority treatment of particular cases will be entertained, as this would operate unfairly against other applicants.

Any inquiries should be made to the regional development grant offices in Billingham, Bootle, Cardiff or Glasgow.

Final decision on Wheal Jane by RTZ next month

Rio Tinto-Zinc Corporation Ltd (RTZ) has decided, subject to a satisfactory outcome of a two-month examination, that it will proceed with the Wheal Jane project without government assistance.

RTZ has for some time been examining the possibility of acquiring and re-opening the Wheal Jane and Mount Wellington tin mines in Cornwall. RTZ's commercial interest in this project is to make available a source of feed for the group's European smelters.

Originally, government participation was sought through the Department of Industry as a pre-condition because the project was smaller than the scale in which RTZ would normally invest. There was a higher risk inherent in Cornish tin mining and the reopening of the mine would make a meaningful contribution towards reducing unemployment in Cornwall.

Following a recent technical survey and as a response to the new thinking outlined by the Chancellor of the Exchequer in his budget speech, which requires a positive response from industry if it is to succeed, RTZ announced on 14 June that it has decided to undertake further, more detailed examination of the whole project before the end of July. If this new study confirms the more favourable indications derived from the recent examination and shows the project to be viable with an acceptable degree of commercial and financial risk, the company will then initiate a programme to reopen Wheal Jane and Mount Wellington without any government aid.

Coal prices up next month

The price of industrial, carbonisation and domestic coals will be increased by the National Coal Board on 1 July, as will the price of smokeless fuels produced or manufactured by the board.

NCB explained that the average rise in each of the above categories will fall between £2 and £3 per tonne although price increases for some individual coals will be outside this range. These increases are on pit and plant prices.

In addition to the increase in NCB prices of domestic fuels to merchants NCB points out that there have been recent increases in transport and distributive costs which merchants may need to reflect in their retail prices at the same time. The increases in the board's prices are necessary, it says, to maintain the viability of the industry when it is engaged in a big programme of capital investment to develop its productive capacity, so as to ensure the maximum availability of indigenous energy for the years ahead.

Regulations proposed on furniture fire hazards

'Draft for development 58: tests for the ignitatered furniture have been circulated to trade and professional associations, consumer groups and others for their comments. Interested parties are asked to reply by 23 July.

This follows the recent announcement by Sally Oppenheim, Minister for Consumer Affairs, that she intended to give consumers greater protection from the fire hazards presented by such furniture.

The proposed regulations will be made under the Consumer Safety Act 1978 and will be based on the British Standards Institution's 'Draft for development 58: tests for the ignitability of upholstered seating'. Copies of the proposed regulations and draft for development 58 are available from Metrology, Quality Assurance and Standards Division, Department of Trade, Millbank Tower, Millbank, London SW1P 4QU, tel. 01-211 3487.

A considerable amount of research has been undertaken in recent years to determine the burning behaviour of modern upholstered furniture. One of the many findings was that semi-modern and modern furniture containing rubber latex foam and polyurethane foam respectively were relatively easy to ignite and burnt rapidly with a high rate of heat and smoke generation and consequent high temperature. They did not, however, sustain smouldering to the same extent as traditional furniture. This, it was found, was more difficult to ignite and burned more slowly with a more gradual build up of smoke.

The various research projects led eventually to the development of ignitability tests for upholstered furniture, including those adopted by the Property Services Agency of the Department of the Environment for procurement purposes and those set out in BSI's 'Draft for Development.'

It is proposed that the regulations should apply to all upholstered furniture supplied, offered for supply or possessed for supply in the UK in the course of a business. Imported furniture as well as furniture manufactured in this country will come within the scope of the regulations. So, too, will second-hand furniture offered for supply etc in the course of a business. In order to give the manufacturers time to modify their furniture where necessary, the regulations would, for a limited period, permit the supply of furniture not complying with this requirement if it carried a warning label indicating that it was ignitable by smokers' materials.

Budget spending cuts

Trade

In his budget speech the Chancellor of the Exchequer announced that the Department of Trade would be contributing £5 million towards the reduction of planned public expenditure in 1979/80. Of this sum, a little over £3 million will be saved as a result of the decisions previously announced to abolish the Price Commission and end support for local price surveys. A little under £2 million will result from savings in the programmes for export promotion, tourism and support to the film industry.

A further £500,000 will be saved as a result of the decision announced by the Minister of State for Consumer Affairs that the grant scheme for Consumer Advice Centres is to be terminated and greater reliance placed on other advisory services, particularly Citizens Advice Bureaux (see page 533).

Transport

Cuts in public expenditure amounting to £25 million are to be found by the Department of Transport. Of this, £15 million should be found by a reduction in British Rail's cash limit on external finance. No cut is to be made in the grant available to passenger services, and therefore there will be no necessary effect on fares.

The remaining £10 million is to be found from savings in the roads programme. These will be found across the board, and will involve

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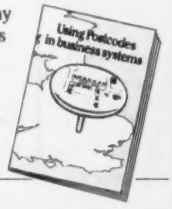

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small reductions in spending on construction, non-parity maintenance, amenity works and new town roads. The review of vehicle excise duty to which the chancellor referred in his speech will begin at once. Further details will be announced shortly, says the department.

Beer prices mark time

Two leading brewers are proposing to hold their present prices on beers for the remainder of the year. This follows publication of Price Commission investigation reports on Whitbread and Co and Bass Ltd. on 13 June.

The commission recommended that no further price increases by Whitbread should be made in the period to January 1980. In its report, 'Whitbread and Co Ltd – Wholesale Prices and Prices in Managed Houses of Beer, Wines, Spirits, Soft Drinks and Ciders', HMSO, £1.00, the commission notes that the company's profitability increased substantially in 1978 to 1979 and was planned to increase by a further significant amount in 1979 to 1980. Given the nature of the industry and its competition the commission found the level of profitability adequate.

After financing net investment of £202 million, the Whitbread group had a cash surplus over the five years to 1978 to 1979 of £39.3 million. However, the original cash flow budget for 1979 to 1980 showed an excess of expenditure of £33.2 million over internally generated funds. The commission accepts that the forecast cash flow is less strong than in the past, but the capital expenditure which is generating the cash deficit has added a substantial element to capacity. The commission comments: 'It would be reasonable to plan to cover some part of this either from the company's cash in hand or by further borrowing rather than by seeking the recovery of all the sums involved through higher prices to current consumers.'

Minister for Consumer Affairs, Sally Oppenheim, said she had noted the Price Commission's report, and that Whitbread had assured her, of its own initiative, that it had not intended to seek to put up its wholesale beer prices before January 1980, except in the event of unforeseeable increases in costs or in consequence of budget changes.

In its investigation report on Bass, the Price Commission has recommended that Bass's notified increase of 7.94 per cent in wholesale beer prices should be restricted to the 6.27 per cent already allowed as interim increases.

Commenting on the report, 'Bass Ltd – – Wholesale Prices of Beer and Prices in Managed Houses', HC 109 ISBN 0 10 210980 X, HMSO, £1.00. Minister for Consumer Affairs, Sally Oppenheim, said that Bass had assured her of its own initiative that, except in the case of unforeseeable cost increases, retail prices of Bass beers in its own managed houses would not be increased before January 1980 and the prices of Bass beers in other outlets should not be increased as a result of any pricing action by the company. Any changes directly resulting from the budget were not covered by this statement.

Bass would implement the balance of its wholesale price application, the minister said. This late and final adjustment to wholesale prices of certain products notified to the Price Commission in January 1979, ought to have no effect on retail prices which had already been increased in full.

Mrs Oppenheim said that as Bass' initiative would give much greater benefit to consumers in terms of retail prices than would have emerged from the Price Commission's recommendations, she was particularly pleased with this outcome.

Modification of VAT rules

Under a modification of the change of rate rules, traders registered for VAT can account for tax at the old 8 per cent or 12½ per cent rates, as appropriate, on supplies made before 18 June, even where the tax point would normally occur after that date. The normal rule when a rate of VAT is changed is that the rate of tax to be charged is that in force at the tax point – frequently the date of invoice as opposed to the date of supply.

Guidance on the effect and application of this modification is given in Customs and Excise leaflet no. 716/1/79 which will be available at local VAT offices.

Telephone bills

To ensure that no charges on telephone bills for calls made before 18 June carry the increased rate of VAT, the new 15 per cent rate of VAT will not be applied to telephone bills issued by the Post Office and the independent Hull telephone service before next November.

VAT retail schemes

The VAT fraction to be used in calculating VAT at 15 per cent from tax-inclusive prices is 3/23rds. Retailers using any of the special retail schemes must follow the rules set out in the existing supplement to notice no 727 for the scheme which they are using.

Customs and Excise notice no 735, which will be available at local VAT offices, incorporates a ready reckoner for calculating VAT at 3/23rds. All the present retail schemes will remain available though some traders will be able to switch to simpler schemes.

Food and drink prices

Following the increase in VAT announced in the budget on 12 June, the Department of Trade has been consulting trade interests with a view to amending the Food (Prohibition of Re-Pricing) Order 1978 to allow shop-keepers to reprice certain articles of food and drink by the amount of the VAT increase.

The order prohibits the repricing of items of food or drink which have been displayed for sale marked with a price. The principal classes of food and drink which attract VAT are alcoholic beverages, soft drinks, ice cream, iced lollies, chocolates and sweets, chocolate coated biscuits, potato crisps and comparable packaged snacks, and shelled, roasted or salted nuts.

Consumer Credit Act 1974

Regulations laid before parliament on 15 June provide that a notice given by the owner of hired goods (eg a television set) to the hirer, of a variation in rental covering only a change in VAT, may take effect immediately and not, as under previous regulations, only after seven days.

The regulations, which came into effect on 18 June, also provide that a notice of such a variation displayed on premises where the hirer ordinarily pays his rental in person, may take the place of individual notices.

The regulations 'The Consumer Credit (Notice of Variation of Agreements) (Amendment) Regulations 1979, SI 1979/661' will be obtainable from HMSO and the text of the new provision is available on request from the Consumers Affairs Division 1, Department of Trade, Room 2602, Millbank Tower, Millbank, London SW1P 4QU, tel. 01-211 3113.

Welsh water charges

In a report published on 13 June investigating the Welsh Water Authority, the Price Commission recommends that the authority's charges should be restricted to the levels permitted during investigation. This would have the effect of reducing the increase of nearly 14 per cent originally sought by the authority by about 2 per cent.

Secretary of State for Wales, Nicholas Edwards, and Sally Oppenheim, Minister for Consumer Affairs, said the same day that the Welsh Water Authority had indicated that, because water charges could only be altered once a year, its charges would not be increased before 1 April 1980. There was therefore no question of an order being made.

The report welcomes the reorganisation of the authority into seven multi-purpose divisions and accepts the logic of the gradual extension of direct billing.

The report also refers to the growth in staff numbers in the authority. The number of staff alone could not be regarded as a conclusive guide to efficiency, since there were other factors, and Mr Edwards said he accepted that performance indicators should be used to provide a guide to cost-effectiveness in the authority, as in public sector monopolies generally. Agreement had in fact already been reached between the government and all water authorities that from 1978/79 onwards their annual reports would include performance indicators.

The report 'Welsh Water Authority – Water, Sewerage and Environmental Services', HC 112 ISBN 0 10 211280 0, is available from HMSO, price £1.25.

Bargain offers order

A modification to relax the rules on comparisons with recommended retail prices has been made in the Price Marking (Bargain Offers) (Amendment) Order 1979 (SI 1979/633) which was laid before parliament on 11 June by Sally Oppenheim, Minister for Consumer Affairs at the Department of Trade.

The new order, which comes into operation with the main order, the Price Marking (Bargain Offers) Order (SI 1979/364), will permit comparisons with a price recommended or suggested by any person in the course of business. Under existing rules such comparisons would not have been allowed for any goods which a manufacturer himself sells by retail.

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Garages with electronic petrol pumps unable to operate at unit prices of £1 per gallon and over are to be allowed to show prices per half gallon, for a limited time.

Four patterns are involved, described in notices of examination 1544, 1587, 1551 and 1562 issued by the Department of Trade. Modifications of the latter two patterns to permit unit pricing of £1 per gallon and over have been authorised, but not all the early production units in service have yet been modified.

In the circumstances, the department has authorised variants of these four patterns of 'liquid-measuring instruments' to be used indicating the unit price as price per half gallon and the price to pay as half the correct amount, which is to be multiplied by two by the operator/customer. These variants will cease to be authorised on 31 March 1980.

Legends stating 'price per ½ gallon' or 'pence per ½ gallon' adjacent to the unit price indicator and '×2' adjacent and to the right of the price to pay aperture are necessary – similar to those specified in September 1976 for mechanical pumps. A further legend must state 'Important. Please pay twice amount shown. This instrument is not suitable for use for trade after 31 March 1980'. All money pre-set controls and associated legends must be obscured, so that they cannot be used, and any prepayment equipment must be made inoperative. Kiosk equipment, money display and ticket printers must also have a '×2' label as appropriate.

Complete descriptions of the variants are to be published soon. More detailed information is available from David Jones, Department of Trade, tel. 01-211 8805.

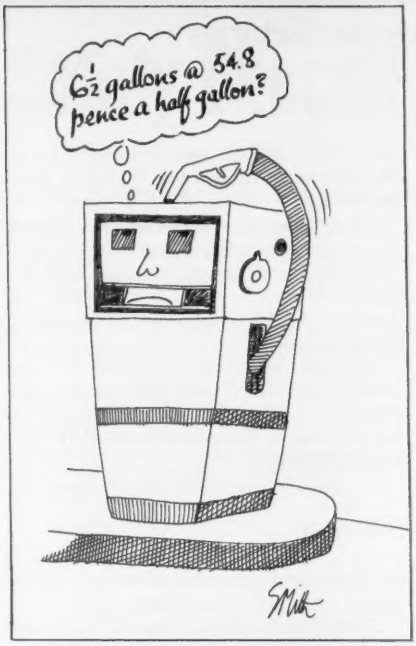
Grants made for rail freight facilities

Grants of £581,000 to ensure that 400 000 tonnes of freight are carried by rail rather than road were announced on 13 June by Norman Fowler, Minister of Transport.

In answer to a parliamentary question the minister said that he had agreed that Tilbury Roadstone Ltd will receive £469,000 towards the cost of an aggregate depot at Barham near Ipswich and Shipbreaking (Queenborough) Ltd will receive £112,000 towards the cost of improving sidings for handling scrap metal at its Queenborough Works, Kent. The two schemes, involving at least 400 000 tonnes, will be of significant environmental benefit to communities in East Anglia, Kent and London, he said.

Retailers must be protected – Borrie

'Retailers and the buying public must be protected against attempts by manufacturers and suppliers to stifle competition in the high street



by imposing – or trying to impose – minimum selling prices on shopkeepers, and I will use all the powers available to me to prevent any apparent moves in that direction,' said Gordon Borrie, Director General of Fair Trading, on 11 June.

Talking to leaders of the National Association of Citizens Advice Bureaux in London, Mr Borrie pointed out that on two occasion in the past eight months, he had brought the provisions of the Resale Prices Act 1976 to the attention of major manufacturers.

'These are interesting examples,' said Mr Borrie, 'of how in exercising my powers I can help the consumer and – which is just as important – ensure that shopkeepers, large and small, are not being pressurised by their suppliers to keep up prices. The retailer's freedom to offer goods to the public at prices he thinks proper is protected by law, and I will use the law to protect that right.'

Risks in cut-price construction

Construction contracts are being frequently lost to firms able to under-cut on price largely as a result of making little or no attempt to provide safe systems of work, says a report published by the Health and Safety Executive on 12 June.

The performance of the more responsible firms, whose safety records compare with the best in manufacturing industry, contrasts with others who appear to take little interest in the health and safety efforts of their representative organisations or local construction industry safety groups, says Jim Hammer, government chief inspector of factories, in a foreword to the report prepared by the Construction National Industry Group (NIG).

The report, which for the first time undertakes a review of the industry's health problems and notes the inadequacy of its supporting health services, says there was a decrease – about 15 per cent – in the number of men killed in building operations and works of engineering construction in 1977 compared with the previous year. Almost 80 per cent appear to have occurred in the medium size and smaller firms.

The report – 'Construction: health and safety 1977-78' – is available HMSO (£1.25 plus postage). An examination of all 131 construction work fatalities in 1977 was also published on Tuesday by the Health and Safety Executive ('Fatal accidents in construction, 1977', HMSO, 90p postage).

The great majority of the accidents were entirely avoidable, says Mr Hammer, in a foreword. 'They were preventable by better training, better briefing, better planning on the part of those who sent these people to work or by more imagination and less casual carelessness on the part of those who did not come back.'

According to the report, 1977 was the year of the type of accident which killed men going about their ordinary day's work, the year of the job done in a hurry and the unsuccessful improvisation. Of the 131 deaths 86 could have been foreseen by management and prevented, it says.

'Inspectors repeatedly meet with scepticism, the report states, 'when they try to impress upon site workers and management that their ordinary activities, justified by many years of 'trade practice' and habit, have killed sensible, experienced men'. To counter this scepticism, the report describes every accident, leaving the reader to draw his own conclusions in terms of his own firm or site.

Most of the men killed in 1977 died in the same way as their ancestors in the industry might have done, by falls from their place of work or by falls of earth or materials. Falls from the place of work killed 74, more than half, mainly scaffolders, painters, roofworkers, steel erectors, or handymen trying to do those jobs. The proportion of men killed in this type of accident also rose in 1977 to 56 per cent from an average for the previous four years of 44 per cent.

Materials handling in Royal Show demonstration

Among the Ministry of Agriculture, Fisheries and Food's wide variety of exhibits at this year's royal show (2 to 5 July at the National Agricultural Centre, Stoneleigh, Warwickshire) is a machinery at work demonstration of materials handling equipment and vehicles. Agricultural development and advisory service representatives will be present to help and answer any questions from visitors to the show.

Cycle industry expands

Opening the international cycle show in Harrogate on 13 June, Kenneth Clarke, Parliamentary Secretary for Transport, said that sales of bicycles went up from £62.7 million in 1977 to £85 million in 1978 and sales of parts from £15.4 million to £20.2 million in the same period. In volume terms the increase in bicycles was more than 15 per cent.

Department of Industry advance factories

Blyth
An advance factory of 900 m² is being constructed for the Department of Industry at Spencer Road, Blyth, Northumberland. A terrace unit type, it is divisible into four individual units of 225 m² each.

Work started on 4 June and the premises should be ready for occupation by the end of December.

Inquiries regarding purchase or lease should be addressed to: Regional Director, Department of Industry, Northern Region, Stanegate House, Groat Market, Newcastle upon Tyne NE1 1YN, tel. 0632 24722.

Scarborough
Conyers, a subsidiary of Dale Electric of Great Britain Ltd, is to have a 1800 m² bespoke factory built by the English Industrial Estates Corporation, on the Department of Industry's site at Cayton Road, Scarborough.

The new factory is urgently required to meet Conyer's proposed expansion plans and will provide additional employment for 83 people.

Grimsby and Bradford
Work has started on an advance factory of 450 m² for the Department of Industry at Cleethorpes Road, Grimsby. The premises should be ready for occupation in August 1979.

Bradford
Work has started on two, advance factories, one of 1300 m² and one of 1500 m² for the Department of Industry at Wakefield Road, Bradford.

The factories are of the terrace unit type and one is divisible into two individual units of 325 m² each and the other one is divisible into three individual units of 500 m² each. The premises should be ready for occupation in December 1979.

Inquiries regarding purchase or lease should be addressed to the Regional Director, Department of Industry, Yorkshire and Humberside Region, Priestley House, Park Row, Leeds tel. 0532 443171.

Pennywell
Work has started on an advance factory of 900 m² for the Department of Industry at Pennywell industrial estate, Sunderland.

The factory is of the terrace unit type and is divisible into two individual units of 450 m² each. The premises should be ready for occupation in September 1979.

St Ives
ABM Precision Steel Company are occupying terraced unit premises of some 230 m² built by the English Industrial Estates Corporation for the development commission on the Penbeagle Estate, St Ives, Cornwall.

The company manufacture various items in small gauge wiring, including identity card clip systems, weapon cleaning equipment, wire accessories for foundation garment trade and kinetic darts.

Employment potential is already 13 full time plus 15 part time and is expected to increase by some 50 per cent over the next three years.

Merger proposals cleared

Secretary of State for Trade, John Nott, has decided, on the information at present before him, not to refer the following proposed mergers and acquisitions to the Monopolies and Mergers Commission under the provisions of the Fair Trading Act 1973:

Kone Corporation/Marryat and Scott Ltd.

Fisons Ltd/the peat business of T. Howlett and Co Ltd.

The Bradwell (FMS) Rubber Estate Ltd/Chersonese (FMS) estates Ltd/The Muar River Rubber Co Ltd/The Sungei Krian Rubber Estate Ltd.

Senior Engineering Group Ltd/The General Engineering Co (Radcliffe) Ltd.

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49D Safety in the Cotton and Allied Fibres Industry, Fabric Production (011 883078 3) (60p)
50 Welding and Flame Cutting using Compressed Gases (011 883080 5) (25p)

Health and Safety Commission leaflets

HSC2 to HSC7 inclusive are being discontinued. These leaflets were originally produced to explain in general terms the implications of the new Health and Safety at Work Act 1974. The texts are being issued in supplements to the June, August, October and December Health and Safety Commission Newsletter to make the copy freely available for reproduction. The leaflets will not be reprinted. The Commission's Newsletter, published bi-monthly, is obtainable on subscription (£1 per annum, or less pro rata depending on quantity). Single copies will be sent on request if a large s.a.e. is provided. Subscription forms from HSE General Enquiry Point (see above).*

*HSC 8 Safety Committees guidance to employers whose employees are not members of recognised independent trade unions
HSC 9 Time off for the training of safety representatives (Code of Practice)

*** Agricultural Safety leaflets**

AS1 A short guide to the 1974 Act
AS2 Tractors safety cabs
AS3 Bulls
AS4 Mushroom worker's lung
AS5 Farmer's lung
AS6 Crop spraying
AS7 Guns
AS8 Noise
AS10 Children
AS14 Cyanide gassing powders – Safe handling
AS16 Brakes for tractor-trailer safety
AS21 First aid in agriculture

*** EMAS leaflets**

MS(A)1 Lead and you
MS(A)3 Asbestos and you
MS(A)4 Study of asbestos workers
MS(A)5 The health of workers engaged in antimony oxide
MS(A)6 Vinyl chloride and you
MS(B)1 Ulceration of the skin and inside the nose caused by chrome
MS(B)3 Anthrax
MS(B)4 Effects on the skin of pitch and tar
MS(B)5 Skin cancer caused by oil
MS(B)6 Occupational industrial dermatitis
MS(B)7 Poisoning by pesticides

Guidance Notes

Guidance Notes (price 30p each) are too numerous to list here but are published under five headings: Medical; Environmental Hygiene; Chemical Safety; Plant and Machinery; General.

Enquiries to HMSO

* *Free of charge*

Higher domestic air fares approved

An application by British Airways to increase fares on three of its domestic routes has been approved, the Civil Aviation Authority announced on Tuesday. The routes are London (Heathrow) to Glasgow or Edinburgh (normal economy fare increased from £35 to £37) and London (Heathrow) to Manchester (normal economy fare up from £24.30 to £25.30). Increases take effect from 17 June.

Because of the rise in fuel costs the authority said on 5 June that it had received applications for fares increases on most domestic routes. Air Anglia, British Island Airways, British Midland Airways and Dan-Air Services, as well as British Airways, had all requested increases of between £1 and £2 (equivalent to about 5-7 per cent, depending on the length of the journey) and Loganair had requested a rise of about 5 per cent on all routes.

The airlines have generally requested that the increases are effective as soon as possible, and CAA says it hopes to deal with them expeditiously.

CAA gave examples of the increases as follows:

Route/Airline	Present economy fare	Proposed economy fare
Channel Islands-Southampton		
British Island Airways	£19.00	£20.00
Isle of Man-Blackpool		
British Island Airways	£15.00	£16.00
London (Gatwick)-Belfast		
British Midland Airways	£30.00	£32.00
Newcastle-Bristol/Cardiff		
Dan-Air Services	£36.50	£38.00

Increases in fares to compensate for fuel costs increases had already been granted to Aurigny Air Services and Brymon Aviation.

Gatwick-Heathrow airlink completes first year

Since it was inaugurated on 9 June last year, the Gatwick-Heathrow helicopter link has carried 58 000 revenue passengers, a load factor of over 32 per cent.

Reviewing the first year's operation the British Airports Authority says about 82 per cent of passengers used the service to interline between flights, most of which were international. Of the 18 per cent of traffic which was locally generated, most also used the service to connect with an international flight. Over 220 destinations served directly and indirectly from Heathrow, and over 100 from Gatwick provided passengers connecting with the service.

BAA has concluded that the airlink should continue until the M25 is completed between Heathrow and Gatwick. It has asked British Caledonian Airways and British Airways Helicopters to apply to the Civil Aviation Authority for a renewal of the operating licence, granted initially for 18 months.

Two proposed route changes were announced on 7 June. BAA, the operator and the air traffic control authorities have now agreed on modifications which would allow the airlink helicopter to by-pass Oxshott and, on many flights also to by-pass Sunbury on Thames. Full consultation will take place before the changes are put into effect.

Sir Keith Joseph's first visit is to Scotland

Sir Keith Joseph, Secretary of State for Industry, made his first official visit to Scotland on 14 June This was the first in a series of visits the secretary of state is making to Scotland, Wales, and to the north-west and north-east of England, and are part of his current review of regional policy, in which he and his ministers intend to visit as many regions as possible where there is high unemployment – to learn by listening.

Sir Keith met employees and management at Govan Shipbuilders and went on to John Brown Engineering. He also met the Strathclyde Regional Council and had talks with Confederation of British Industry, Scottish TUC and Scottish Development Agency representatives. He also took the opportunity to see something of the Glasgow eastern area renewal project.

Mitchell opens microcomputer fair

Opening Intel at the Wembley conference centre on 11 June, David Mitchell, Parliamentary Under-Secretary of State for Industry, said that the fact that he had chosen to accept this microcomputer fair as one of his first invitations was itself an indication of the importance he attached to an advanced technology which could do so much to aid the productivity of British industry.

It was not possible to over-stress the importance of productivity as the key to living standards, the key to jobs and the key to good wages for Britain in the future, he said.

The most striking feature of Intel, and perhaps the whole United States microelectronics phenomena, seemed to be the almost continuous generation of marketable innovations. This highly creative commercial process was shared by both small and large companies. 'We should not forget that even the giants of this industry started as small firms relatively recently', Mr Mitchell pointed out.

Creativity and invention were not exclusively American preserves; on a per capita basis Britain produced more Nobel prize winners than any other country. This raised the question as to why there were no Intels in the UK. Intel's success was not due to government assistance or initiative but to the combination of technological and entreprenuerial genius in an environment which made it worthwhile for people to start and expand profitable businesses, Mr Mitchell said. It was central to the government's philosophy that conditions were created in Britain in which people wished to do just that, and felt it was worthwhile making a career for themselves, building an enterprise which would create wealth for the country, jobs for employees and rewards for the entrepreneur.

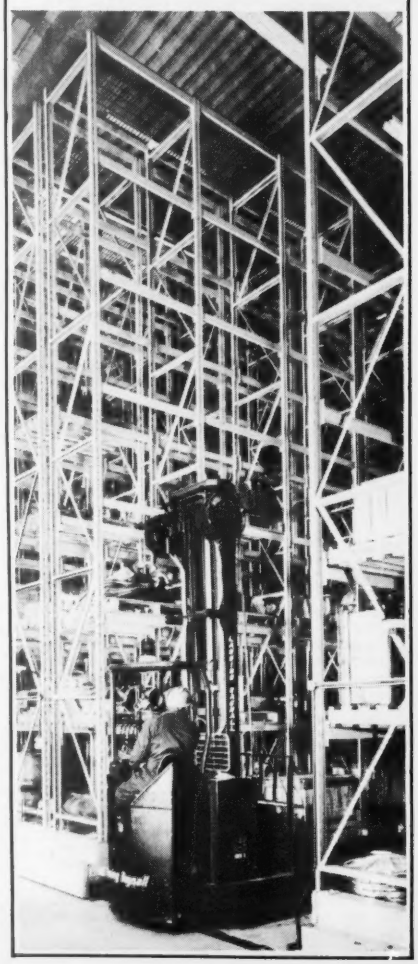
Mr Mitchell concluded by saying 'I would welcome views from all here on how best we can help promote British enterprise to seize their share in the great growth markets opening up for microcomputers in all their guises'.

Official appointments

Tom Weatherby, managing director of Readson, the Manchester-based textile and clothing group, has been appointed chairman of the Department of Industry's Garment and Allied Industrial Requirements Board. He succeeds Leslie Bamford, formerly director of Coats Patons, who has been chairman of the requirements board since its inception in 1975.

Mobile racking for nuclear station commissioned

This newly commissioned Finspa Gripsafe installation provides the CEGB's nuclear power station at Wylfa, Anglesey, with a concentrated storage facility for over 1500 tonnes of heavy plant spares and maintenance equipment.



Technology news

More SRC support for materials and energy conservation research

Increased Science Research Council support for multidisciplinary research into materials and energy conservation in the materials processing industries is announced in a report 'Making the most of materials', published on 11 June. The council's engineering board has set aside an assured minimum level of funding for research in this area, starting with an earmarked commitment of £200,000 in the current academic year. A programme co-ordinator is to be appointed to manage the programme, to stimulate and co-ordinate SRC sponsored research projects, and to maintain close contacts with other government agencies and with industry.

It is now widely recognised that more technological effort has to be directed nationally towards conserving energy in industrial operations; similarly conservation of potentially scarce materials is a matter of growing national and international concern. The new programme will encourage research into more efficient production routes and use of existing material as well as research into new materials, the introduction of which could reduce both energy usage and dependence on potentially scarce raw materials.

Economies in usage of energy and materials can be achieved by significantly decreasing the total energy factor at key energy-intensive stages in processing; choosing materials for a particular use on the basis of a total energy concept; shifting the balance of research and development in processing to those materials which can be recycled; and increasing the yields at each stage in a fabrication or processing chain.

The council believes that the success of this initiative will be markedly dependent on a more closely integrated partnership between university and polytechnic departments and industry, in which the academics concentrate on their traditional role of developing understanding, but with the emphasis shifted into areas of national need. SRC therefore wishes to give strong encouragement to university groups willing to promote multidisciplinary applications based on a close association with a processing industry.

'Making the most of materials', was prepared by a working group set up by the processing sub-committee of the SRC engineering board's materials science and technology committee. The report is available free of charge from Ms J. E. Nunn-Price, SRC, Engineering Division, PO Box 18, Swindon, Wiltshire, SN2 1ET.

Energy-intensive steel making.

NRDC and Nippon Columbia sign licensing agreement on surround sound equipment

The National Research Development Corporation has concluded an agreement with Nippon Columbia Ltd of Japan granting the NRDC licensing rights in respect of patents filed by Nippon Columbia and deriving from its surround-sound UD-4 disc system. At the same time Nippon Columbia has been granted licences to manufacture audio equipment falling within the claims of NRDC patents.

The NRDC has for a number of years been financing the development of the Ambisonics surround-sound system. The development work has been carried out by a team headed by Professor Peter Fellgett of the University of Reading and Michael Gerzon of the Mathematical Institute of the University of Oxford, supported by IMF Electronics Ltd.

The comprehensive patent portfolio established by the NRDC team has been augmented by the agreement with Nippon Columbia and also by the recent assignment to the corporation of all the surround-sound patents and patent applications of Dr Duane H. Cooper, associate professor at the University of Illinois, United States.

NRDC and Nippon Columbia, with the British Broadcasting Corporation and the Independent Broadcasting Authority, have been collaborating for several years in the development of an improved surround-sound system – UHJ – and this close association will continue.

Domestic audio equipment capable of replaying material encoded according to the UHJ specifications is available and UHJ gramophone records have already been released during the current year.

Low fatality risk claimed for nuclear accidents

In a serious nuclear accident, the chance that anyone living within 5 km of the reactor receiving a lethal dose of radiation is one in 100 million, a British nuclear safety expert told a conference in Peking on 12 June.

Individual risk for most human activities can be calculated by dividing the number of deaths from a particular cause in a year by the total population. By this means it can be shown that everyone has a one in 160 chance of a fatal circulatory disease, a one in 3000 chance of being killed in an accident and a one in 400 000 chance of being electrocuted. This method assumes that the risks are evenly distributed through the population.

Robert O'Neil, head of engineering safety technology at the UK Atomic Authority's safety and reliability directorate, said that in calculating the risk from a serious nuclear accident the test was much tougher. It was assumed that an individual would stand at the 1000 metre boundary fence during a hot release of some of the reactor's volatile fission products, and would remain there indefinitely after the accident.

In these extreme circumstances the risk to that individual lay between one chance in a million and one in ten million of receiving a lethal dose of radiation. For all more normal cases, such as people living within 5 km of the reactor, the chance would be down to one in 100 million and at 15 km to about one in 1000 million – approximately the same as being hit by a meteorite or killed in a supernova explosion of a star.

Search on for outstanding girl technician engineer

A competition to find the girl technician engineer of the year offers the winner an award of £250. The Caroline Haslett memorial trust and the Institution of Electrical and Electronics Technician Engineers are repeating the award which they successfully introduced last year (see *Trade and Industry*, 8 December 1978). The closing date for nominations is 19 September and the announcement of the winner will be made in November.

The engineering industry needs to attract more young people of the highest calibre and the aim of the award is to focus attention on electrical and electronic engineering as a worthwhile career for women. The award winner will have successfully undertaken technical education and training and have held down a responsible job. The award sponsors' hope is to encourage more girls to enter the electrical and electronic engineering profession.

Further details are available from Eileen Sheldon, IEETE, 2 Savoy Hill, London WC2R 0BS, tel. 01-836 3357.

New products

Freepost reader service

For further information on items in this section, circle the corresponding number on the reader services page near the end of the magazine.

Truck refrigeration unit eliminates drive belts

A small but powerful diesel-powered refrigeration unit with an in-line shaft drive layout has been developed for trucks and trailers in the 6 m to 10 m range by Hubbard Engineering Co Ltd. The model 1000 features a transverse arrangement of diesel engine, electric motor and compressor, and has the condenser mounted at the end of the unit instead of the usual front-mounting. This layout also eliminates most of the drive belts associated with conventional designs. A hinged panel bearing the electric controls provides easy access for servicing.

Designed for over-cab mounting on the front bulkhead of the vehicle body, the basic unit is approximately 1.55 m wide by 595 mm deep by 600 mm high, with an irregularly shaped section protruding 735 mm into the insulated space of the vehicle. Control switches, pilot lights, thermostat and mains plug are grouped on the externally mounted unit.

Sound-insulating foam, sealed with sprayed pvc, is applied to the front, base and ends of the equipment's zinc-coated sheet-steel housing to reduce its operating noise level to 88 dB at 1 m and 77 dB at 7 m. Equipped with a fuel tank and 12 V battery with alternator charging system, the refrigeration unit operates independently of the vehicle on which it is mounted.

A temperature controller with a set-point scale from −40°C to +40°C is fitted, together with a selector switch enabling the operator to pre-set the heating or cooling conditions required. The controller maintains temperatures to within 1½°C of set-point irrespective of ambient conditions. When the thermostat control switches on the refrigeration unit, engine speed is increased from idling to 2800 rev/min and, after a short delay, an electromagnetic clutch starts the compressor and condenser fan; the 12 V dc evaporator fans also start.

When the temperature set-point has been reached, the clutch disengages the compressor and condenser fans, and engine speed is reduced to a fast idle. Heating and defrosting is performed by a hot-gas system that bypasses the condenser to feed discharge gas direct to the evaporator through a three-way valve.

A smaller version, the model 650, is available for insulated bodies on trucks in the 5 m to 9 m range.

Further information: circle 512

Refrigeration unit operates independently of the vehicle.

Easy to fit hydraulic tail lifts for trucks or vans

Anthony Carrimore (Sales) Ltd has introduced 1 tonne and 1½ tonne capacity hydraulic tail lifts in versions for either flat trucks or van bodies. The assemblies are easy to fit and require minimal maintenance. They may be used with articulated trailers, if required.

The low-profile, cable-operated platform tailboard loaders are run from pushbutton-controlled 12 V or 24 V electro-hydraulic power packs. A manual control regulates speed of descent of the loaded or unloaded platform and locks the system for road travel.

Of robust construction, the hydraulic cylinder is of the displacement type with its seal operating on a ground hard-chromed piston rod to ensure long and trouble-free service. The cables run on large-diameter pulleys with high-capacity ball bearings. Heavy-duty platform runners with rollers and ball bearings, widely spaced to confer stability, give a smooth ride even with off-centre loads.

A smooth ride with off-centre loads.

Two 915 mm deep standard platforms are offered, either of timber or 3 mm steel tread. Both are light in weight but rigid. Folding is assisted by torsion bars which counterbalance the platform weight. Various platform options – hinged ramps, detachable ramps, side rails and platforms above the standard size – can be supplied to order.

Further information: circle 513

Plastics improve drill power-to-weight ratio

Black and Decker Ltd's range of heavy-duty end-handle power drills has been increased by the introduction of three new double-insulated models with improved power-to-weight ratio. The range is headed by the single-speed HD2500, which is a straight replacement for the GD25, and includes two-speed models HD2504 and HD2508.

In the new series, metal in the bodies has been replaced by tough, resilient Maranyl plastic, which is totally non-conduction for electrical safety. Since Maranyl is also lighter then metal, comfort, balance, handling and power-to-weight ratios are all superior to those of earlier types.

The HD2500 range features advance-design motors with high-temperature polyester impregnated windings which give enormously increased resistance to burnout under heavy loading and longer motor life than is possible with conventional power units. The full-load input is 500 W for all three drills.

All the new drills can be used in standard pedestal stands for precision drilling in engineering and general industrial applications. They also comply with current safety and interference suppression requirements.

Further information: circle 514

Parliament

Monday, 11 June

Manufacturing industry

Stuart Holland (Lambeth, Vauxhall) asked what was the share of the top 100 manufacturing companies in 1948, 1958, 1968 and 1978 in a *total manufacturing employment and* b *total manufacturing assets.*

Mr Marshall replied that results of the censuses of production indicated that the 100 largest UK manufacturing enterprises in the private sector (in terms of net output) accounted for 31 per cent of total employment in manufacturing industry in 1963 and 34 per cent in 1968, 1970 and in 1975. Comparable information was not available for 1948, 1958 or 1978.

Analysis of company accounts indicated that the 100 largest manufacturing companies in the private sector of Great Britain (in terms of capital employed) accounted for just over 60 per cent of all manufacturing companies' estimated capital employed in 1975. Comparable information was not available for other years.

Mr Holland also asked what number of the larger firms in 1978 represented half of manufacturing output.

Michael Marshall said that information for 1978 was not available. The most recent information, available from the census of production, related to 1975, when the largest 170 and 100 enterprises in the private sector of manufacturing accounted for about 50 per cent and 40 per cent respectively of the total net output of manufacturing industry.

Price rise investigations

Renée Short (Wolverhampton North East) asked how the Office of Fair Trading was to become aware of which price rises to investigate now that it was empowered to do so.

Mrs Oppenheim said that when the recently announced proposals were enacted, the Director General of Fair Trading would have powers to undertake investigations into areas of limited competition. In selecting those areas the director would draw on a wide range of sources of information including business and financial statistics, published studies and reports, as well as representations received from the public and from companies that might be affected by practices which restrict competition. The Secretary of State for Trade would also be empowered to request the director general to investigate prices or charges which were of major public concern.

Output ratios

Stuart Holland (Lambeth, Vauxhall) asked what number of the larger firms in 1948, 1958, 1968 and 1978 represented half the output of: a *construction* b *retail food sales and* c *retail drink sales, distinguishing between alcoholic and non-alcoholic drinks.*

Mr Tebbit gave the information available for construction on a comparable basis related to undertakings over time as shown below. He said that for total retail sales the available information for census of distribution years (1950, 1961 and 1971) related to organisations (undertakings operating one or more establishments within the scope of the census). For 1976 the information related to businesses (legal units) and was not therefore comparable with earlier years. Separate information for retail food and drink sales for 1971 and 1976 could only be provided at disproportionate cost.

Number of larger undertakings accounting for half of construction output Year		Number of businesses accounting for half retail sales Year		Number of larger organisations accounting for half retail sales Year	
1958	925	1978	–	1950	4750
1968	860	1953	–	1961	1700
1976	900	1976	390	1971	930

R&D expenditure

Renée Short (Wolverhampton North East) asked what was the current expenditure on industrial research and development; how this compared in real terms with that being spent in 1969, and for the comparative figures for France, West Germany, Japan, the United States, Italy, Sweden and Canada.

Mr Mitchell said the most recent figures for industrial research and development expenditure related to 1975. The following table shows the expenditure in that year with the figure for 1969 expressed as an index 1975=100.

INTERNATIONAL COMPARISON OF INDUSTRIAL INTRAMURAL EXPENDITURE ON R&D[1] at 1975 prices

	1975=100		$ million[2]
	1969	1975	1975
UK	112.9	100.0	2 914 (£1 340 million)
France	89.3	100.0	3 645
Federal Republic of Germany	78.3	100.0	5 874
Japan	77.8	100.0	5 637
US	111.6	100.0	23 540
Italy	82.5	100.0	996
Sweden	62.3	100.0	834
Canada	94.4	100.0	704

Source: All countries other than UK – OECD

[1] Expenditure by all industrial business organisations (including public corporations and research associations) [2] Converted from national currencies by using official exchange rates. These rates do not always reflect the real relationship between research costs in different countries and these dollar totals should be considered merely as indicators of orders of magnitude.

Export and import trade

Stuart Holland (Lambeth, Vauxhall) asked what number of the larger firms in 1978 represented half of a visible export trade and b visible import trade.

Mr Tebbit said that 87 UK enterprises accounted for half of UK visible exports in 1976, the latest year for which information is available. Corresponding information for 1977 would be published in an article 'Direct exporters and credit terms of exports in 1977', in *Trade and Industry* during July. Similar information for imports was not available.

Prestcold

Michael Grylls (North West Surrey) asked if the Secretary of State for Industry intended to issue a directive to the National Enterprise Board to negotiate with British Leyland for the purchase of Prestcold.

Mr Marshall said that he understood that the secretary of state's predecessor envisaged issuing a direction of this nature but he did not intend to take the matter further.

Tuesday, 12 June

Consumer advice centres

Michael Neubert (Havering, Romford) asked the Secretary of State for Trade about the future of the grants for consumer advice centres.

Mrs Oppenheim said that she was not satisfied that this grant scheme, which provided for the payment of the full running costs of specialist consumer advice centres, was cost effective as a method of providing an advisory service. She had, therefore, decided to terminate the scheme at the end of this financial year.

She recognised that this might lead to closure of some centres and so might increase the workload of other advisory services. She would be consulting interested bodies on the implications of this. In particular, the Citizens Advice Bureaux might well have a greater part to play in the future. She would welcome their proposals as to how they can meet this objective. She was anxious to encourage the CAB movement because it was a voluntary service which was both effective and economical.

Paper: implications of Greek accession

Roger Moate (Faversham) asked what were the implications for the United Kingdom paper and board industry of Greek accession to the EEC and what transitional arrangements were involved.

Mr Parkinson replied that imports of paper and board from Greece already entered the EEC duty free. Greek tariffs and other non-tariff barriers on imports from the EEC would be phased out progressively in the five years after Greek accession. The overall implications for the UK industry were likely to be small, though there should be some increase in export opportunities.

BAe's R&D

Nicholas Winterton (Macclesfield) asked what was the government's policy on research and development expenditure in both civil and military projects in British Aerospace.

Mr Marshall said that civil research and development which was directly related to British Aerospace's commercial activities was the responsibility of the corporation. The Department of Industry continued to fund certain work, related for example to energy conservation and the reduction of noise, which was necessary in the wider national interest. The government's policy towards the aerospace industry would pay full regard to the need for adequate research and development. The Ministry of Defence funded work which is necessary for defence purposes.

Seal skins

John Cartwright (Greenwich, Woolwich East) asked the Secretary of State for Trade if he would seek to impose a ban on the import of seal skins into the United Kingdom.

Mr Parkinson said he would not. While he understood very well the concerns of Mr Cartwright, there was no authoritative agreement that seals, particularly in Canada, were threatened as a species. Whether a ban on imports of skins would be consistent with the UK's international obligations was also open to question. On the other hand unilateral action would undoubtedly adversely affect Britain's commercial interests and external relations without, in all probability, stopping the annual hunt of seals.

Wednesday, 13 June

Shipbuilding intervention fund

Michael Meacher (Oldham West) asked what had been the estimated effect of the Shipbuilding Intervention Fund for each year since it was introduced, in terms of jobs, balance of payments, output, and in other measurable economic respects, differentiating where possible between the development areas and the rest of the United Kingdom.

Mr Marshall said that orders for 64 ships had

Ministers

Department of Industry

Secretary of State: Sir Keith Joseph
Ministers of State: Adam Butler
Lord Trenchard
Parliamentary Under-Secretaries of State: Michael Marshall
David Mitchell

Department of Trade

Secretary of State: John Nott
Ministers of State: Sally Oppenheim
Cecil Parkinson
Parliamentary Under-Secretaries of State: Norman Tebbit
Reginald Eyre

been secured with assistance from the fund, details are as follows:

Year ended	Assistance offered (£ million)	No. of ships	Gross tonnage ('000)	No. of man years of work in the shipyards
31 Mar 1977	5.0	1	128	3 750
31 Mar 1978	50.8	55	400	21 250
31 Mar 1979	15.0	8	49	2 991
Total	70.8	64	577	27 991

All these orders were placed in yards located in the assisted areas. In addition to the work for the shipyards these ships provided substantial orders for a wider range of firms supplying materials, components and subcontractors. It was not possible to assess the effect on the balance of payments without disproportionate cost.

Manufacturing investment

Michael Meacher (Oldham West) asked the Secretary of State for Industry if he would state the level of United Kingdom manufacturing investment, in gross and net terms respectively, for each year since 1960; what was the ratio in each of these years to the gross national product at current prices; and what was the comparable data for France, West Germany, the United States, Japan and Sweden.

Mr Mitchell gave the figures for UK investment (see table). No figures were available for France and the Federal Republic of Germany and only gross manufacturing investment was readily available for the other countries. Comparable date was not available for Japan before 1965, Sweden before 1963 and the United States before 1964.

GROSS DOMESTIC FIXED CAPITAL FORMATION AS A PERCENTAGE OF GROSS DOMESTIC PRODUCT [1]
At current market prices

	Japan	Sweden	US	UK
1960	..	..	..	4.0
1961	..	..	..	4.6
1962	..	..	..	4.1
1963	..	4.7	..	3.5
1964	..	4.0	4.1	3.7
1965	6.2	4.2	4.6	4.0
1966	5.6	4.4	4.8	4.0
1967	7.3	4.2	4.6	3.7
1968	8.3	4.0	4.6	3.8
1969	8.9	3.8	4.7	3.9
1970	9.2	3.9	4.4	4.2
1971	7.8	3.9	4.2	3.8
1972	6.5	3.9	4.1	3.2
1973	7.1	4.2	4.1	3.2
1974	7.3	4.9	4.2	3.7
1975	4.9	4.8	3.9	3.4
1976	4.6	4.7	3.7	3.2
1977	..	..	..	3.5
1978	..	..	..	3.6

[1] The percentages are of gross domestic product, a measure of national income that is more consistent with the measures of manufacturing investment. Source Overseas data: *OECD National Accounts* 1976 and earlier volumes; UK data: *National Income and Expenditure* 1967-77; *Trade and Industry*, 1 June 1979 and CSO. All data, except that for Japan, is according to the new system of national accounts.

MANUFACTURING INDUSTRY

	Gross domestic fixed capital formation at current market prices				Domestic fixed capital formation net of capital consumption at current market prices
	Japan Yen thousand million	Sweden Kronor million	USA $ dollars million	UK £ million	UK £ million
1960	..	..	..	1 021	518
1961	..	..	..	1 248	698
1962	..	..	..	1 182	591
1963	..	4 324	..	1 068	437
1964	..	4 116	25 934	1 232	563
1965	1 980	4 761	31 303	1 423	692
1966	2 074	5 449	35 736	1 517	726
1967	3 190	5 665	36 200	1 485	662
1968	4 315	5 600	39 897	1 639	740
1969	5 325	5 912	43 700	1 822	860
1970	6 481	6 646	43 617	2 130	1 046
1971	6 211	7 153	44 291	2 187	949
1972	5 914	7 824	47 844	2 044	669
1973	7 862	9 343	53 679	2 347	784
1974	9 668	12 146	58 866	3 067	1 133
1975	7 116	13 870	57 641	3 522	1 043
1976	7 626	15 336	62 225	3 958	964
1977	..	..	..	4 862	1 337
1978	..	..	..	5 794	1 774 [1]

[1] Capital consumption for 1978 is an estimate.

Thursday, 14 June

Trichloride-containing lamps

Greville Janner (Leicester West) asked the Secretary of State for Trade whether he would institute an inquiry into the safety of lamps or other articles containing either tetrachloride, or tri- or tretrachlorethylene, and, if breakage of such articles would allow gas and fumes to escape with a possibility of death or injury, whether he would exercise his powers under the Consumer Safety Act 1978 to ban the import and sale of such items.

Mr Janner also asked whether he had consulted other EEC governments concerning the banning of the sale of liquid filled lamps or ashtrays which, when broken, allow gas and fumes to escape with the possibility of death or injury.

Mrs Oppenheim said she did not consider that any investigation into the safery of these lamps was necessary. All mains-operated domestic electrical equipment sold or possessed for sale in this country, including lamps, must comply with the Electrical Equipment (Safety) Regulations 1975 which included a provision relating to the emission of toxic gases. In May 1978, the Department of Prices and Consumer Protection drew the attention of British manufacturers and importers of these appliances to these regulations and also recommended that the lamps should not contain carbon tetrachloride and should bear advice on safe usage and the precautions to be taken in the event of breakage.

An EEC directive, which was likely to be adopted very shortly, required member states to prohibit the use of a wide range of liquids, including those referred to by Mr Janner, in ornamental objects such as lamps and ashtrays. This directive, when adopted, would of course be implemented in the UK.

Sperm whale oil

Eldon Griffiths (Bury St Edmunds) asked what was the approximate value of the sperm whale oil imported in each of the years 1970 to 1978 and what tonnages of sperm whale oil were imported, during each of the years 1970 to 1978 and approximately how many whales were killed to provide these amounts of oil. He also asked what industries were the principal users of sperm oil.

Mr Parkinson gave details of identifiable imports of sperm oil. He said it would be misleading to relate these imports to numbers of individual whales killed as there was no conversion factor sufficiently reliable to produce an accurate equation.

IMPORTS OF UNPROCESSED (CRUDE AND REFINED) SPERM OIL [1]

	1970	1971	1972	1973	1974	1975	1976	1977	1978
Quantity (tonnes)	14 341	11 490	7 233	8 533	11 474	7 747	8 528	5 196	4 269
Value (£'000 cif)	1 261	1 535	799	966	1 892	1 453	2 078	2 477	1 595

IMPORTS OF SPERM OIL (INCLUDING OIL OF OTHER WHALES IN 1977 AND 1978) PROCESSED BY HYDROGENATION (OR OTHER MEANS OF HARDENING OR SOLIDIFYING) [2]

	1975	1976	1977	1978
Quantity (tonnes)	4	—	35	38
Value (£'000 cif)	2	—	19	20

[1] The figures prior to February 1973 exclude refined (but not otherwised processed) sperm oil which was not separately distinguished. [2] No licences were granted by the Department of Environment for the importation of the oil of whales other than sperm whales in either 1977 or 1978. The trade under this heading can therefore be taken to be entirely in sperm oil.

Mr Mitchell said that the principal user of sperm whale oil was the leather tanning industry. Consumption of sperm oil had declined as substitutes for specific applications had become commercially available.

Mr Griffiths also asked what steps were being taken to encourage research into commercially viable substitutes for sperm whale oil and what results had been achieved to date.

Mr Mitchell said that through the garment and allied industries requirements board the department had funded a study of sperm oil substitutes which the British Leather Manufacturers' Research Association issued as a report in December 1978. The report concluded that considerable work needed to be done before substitutes for all applications of sperm oil would become available in commercial quantities. The department would continue to encourage the use of substitutes, and projects to develop alternatives might qualify for financial assistance.

Friday, 15 June

Concorde costs

Robin F. Cook (Edinburgh Central) asked for Concorde costs, providing all figures at current survey prices.

Mr Marshall said that up to 31 December 1978 British net expenditures on the Concorde project totalled £1.96 billion at 1979 public expenditure survey prices; corresponding information about French expenditures was not available.

NEB guidelines

Michael Grylls (North West Surrey) asked the Secretary of State for Industry whether he intended to issue new guidelines for the National Enterprise Board.

Mr Marshall replied that it was expected that the guidelines issued to the NEB under the Industry Act 1975 would require amendment reflecting the legislation that the government proposed to introduce.

NI shipyard launchings

Peter Robinson (Belfast East) asked what was Northern Ireland's share of United Kingdom and world shipyard launchings in 1974 and in the latest available full year.

Mr Marshall gave the following information:

LAUNCHINGS IN NORTHERN IRELAND
Gross registered tons

Percentage share:	1974	1978
of United Kingdom	26	34
of world	0.9	1.8

Bargain offers

Sir Donald Kaberry (Leeds North West) asked the Secretary of State for Trade, if he would initiate the processes to repeal the Price Marking (Bargain Offers) Order 1979 no. 364 especially in view of its wording and the probable inability to pursue a successful prosecution for infringement of the order.

Mr Eyre said that he would not retain this order as he believed it would be of genuine benefit to consumers by providing protection from misleading claims while at the same time allowing businesses to compete honestly through the use of a wide range of informative claims.

'T & I' index

Readers wanting to know when articles and items of information were published in *Trade and Industry* should consult the published indexes which are issued free to subscribers. For material published in recent months, inquiries of this kind can be made to the Department of Industry Library's indexing section, tel. 01-215 5842 or 01-215 5879.

European community news

Commission outlines 1990s energy targets

EEC energy objectives for the 1990s mean that the relationship between energy use and energy growth will have to be reduced from the present one to one ratio to less than one to 0.7 in 1990. Coal and nuclear power will have to fuel 75 per cent of the community's electricity, necessitating a 25 per cent rise in coal consumption, and oil imports will have to be frozen at 470 million tonnes up to 1990.

These are the main targets of the European commission's energy objectives for the 1990s, presented by EEC energy commissioner Guido Brunner on 14 June.

In addition he presented the commission's energy savings report. This states that by 1980 the commission wants to see energy saving effort of all member states drawn up to have comparable effects. The commission wants to have talks with European motor manufacturers aimed at developing cars and vans which use less fuel – which would have to be done in conjunction with the industrial policy aims set out for the motor industry by commissioner Davignon – and it wants also to push

Energy commissioner Guido Brunner

energetically ahead with investments in the energy fields, helped through the prices mechanism, taxation and investment aids. These objectives were an attempt to take a long-term view of market developments and energy production and should help markets and governments in judging policies, Mr Brunner said.

This was specially important at a time when a number of energy uncertainties worldwide had to be contended with. The community would have to make enormous efforts to cope with the economic and social burdens in the years ahead.

World energy prices were developing unfavourably from a European point of view. The 25 per cent rise in oil prices, announced by oil producers, meant a reduction in purchasing power in the European community of about $11 billion – the same as in 1973 when prices rose by 100 per cent. This could be countered only by enormous investments in the field of energy. He said that each year up to 1990, $50,000 million would need to be invested and that these long-term targets needed swift decisions.

The policies now endorsed by the commission drew up a balance of what had been achieved. In many respects the EEC had not been doing badly Mr Brunner said. 'In 1977 for example, we saved some 8 per cent of our energy needs'.

Milk imports: court case

French dairy farmers accusing the UK of discrimination against milk imports have taken their case to the European Court of Justice. There are fears that if the case goes against Britain the doors will be opened for European dairy co-operatives to export cheaper milk in bulk to British supermarkets.

Prices of milk sold in supermarkets could fall by as much as 3p a pint putting doorstep deliveries in danger. The UK is unique with its doorstep deliveries of the daily pint and the price of milk in cartons in shops is fixed to protect dairy rounds.

The dispute has arisen because imported milk is not open to inspection on dairy premises and health authorities are unwilling to grant licences when British animal health and public health regulations cannot be properly applied.

The Ministry of Agriculture, Fisheries and Food has sent written observations on UK health regulations to the European court as well as official representatives accompanied by counsel.

The case reflects the difficulties in some areas of applying the principle of a free market when there are national interests to be taken into account. The court's decision is expected in about two months' time.

Japan's trade surplus discussed by ministers

Japan's increasing trade surplus with the community was discussed by the council of ministers on 12 June. On commission figures, the 1978 surplus of $6.4 billion may rise to $8 or $9 billion this year even though Japan's global surplus is declining. The community will continue to impress upon Japan the need to reverse the trend of the ever-widening trade gap.

The community is particularly concerned about the question of equal access to markets, especially the need to obtain changes in certain regulations on, for example, the testing of goods, which have hindered penetration of the Japanese market by foreign products.

The Japanese market has a number of peculiar features. For example, it is not easy to penetrate the long distribution chain from producer or importer to consumer – the Japanese distribution system employs a much higher proportion of the work-force in distribution than does the UK – but it is more difficult and expensive to by-pass it. Although Japanese imports of manufactured goods rose sharply in 1978, the Japanese propensity to import is still lower than most developed countries, and the tradition of saving, rather than spending, remains strong.

There are some helpful indications. The Japanese cabinet has recently decided to put its weight behind a number of moves to open the Japanese market by, for example, simplifying standards and inspection procedures. The community will continue to press for progress on specific points which can contribute positively to a reduction in the trade gap by increasing community exports to Japan.

Annual report published on competition policy

The European commission has published the eighth report on competition policy dealing with developments during 1978 in conjunction with publication of the twelfth general report on the activities of the European communities.

It is in three parts. The first concerns the application of the rules of competition to com-

More community news

Information on European community matters and about member states can often be found in other section of *Trade and Industry*. For this week's additional news, turn to the following pages:

Overseas trade news

Export office procedure courses in Scotland 540

Exhibitions

British firms fly high at Paris air show 543
Band mills win orders at Ligna 543
Wide range of UK products shown at Milan print fair 544

Country data

Belgium 546
France 546
Luxembourg 547

panies – articles 85 and 86 of the treaty of Rome – and gives summaries of important cases which have been dealt with during the year.

Generally, the commission re-affirms its commitment to enforcing a competition policy (see *Trade and Industry* 8 June) which firmly opposes any attempts by companies to partition markets. This involves attacking attempts by companies to ban exports or imports, to fix production or sales quotas, to partition markets, to abuse dominant positions by refusing to supply longstanding customers or to charge discriminatory or excessive prices.

However, the commission considers that the provision of exemption procedures does give the policy a certain flexiblility and that exemption has been used to encourage desirable forms of co-operation. Wherever possible bans have been lifted for small undertakings in order to foster their activities and their development, for example, the commission has recently specified the conditions in which article 85 does not apply to sub-contracting agreements.

As far as medium-sized undertakings in particular are concerned, the commission is currently occupied in steering through a regulation to exempt certain patent licensing agreements. This is designed to promote the transfer of technology while ensuring that rigid partitioning of markets by those involved is rendered impossible. The commission is continuing also to look out for abuses of a dominant position, and recent judgements of the European Court of Justice have given it support in this area. During the year the commission took its first decision banning an agreement involving a joint venture and has defined the limits of permissible co-operation in such agreements.

This part of the report also contains a section on the main developments in national competition legislation in most member states. The commission considers that in each case national legislation has been brought more into line with community rules and the means of maintaining effective competition throughout the community have been strengthened.

Part two deals with state aids. The report points out that the commission recognises that the economic crisis, slow economic growth, and the high level of unemployment have caused member states to intervene increasingly in the economic process. Although state aids have a part to play in restoring competitiveness to industries in distress, they should be used in conjunction with restructuring measures, and not merely to restore the status quo in declining industries, since this would only serve to hinder the adjustments that the community's industries must make if they are to secure the economic and social future of the community.

On public undertakings, a draft directive on the basis of article 90(3) of the EEC treaty was discussed by experts from member states during 1978. Since the draft incorporates a number of ideas which have never before been used in community legal instruments, further detailed consultations will be necessary.

Part three of the report contains statistics on the trends in national and international takeovers and mergers, share purchases and joint ventures, on the development of industrial concentration and on distribution structures and pricing.

New solvency margin regulations for Lloyd's

Draft regulations published on 12 June will, if they are adopted, apply the solvency provisions of the EEC non-life insurance establishment directive to Lloyd's. The regulations were prepared in consultation with Lloyd's under the European Communities Act 1972.

Lloyd's as a whole will be required to meet the solvency requirements which apply, with certain exceptions, to insurance companies under the margin of solvency regulations made in 1977 for all the general insurance business carried on by its members. The calculation of the margin of solvency will take into account the assets and liabilities of Lloyd's itself as well as those of individual members. The regulations will not require individual members or syndicates to maintain margins of solvency.

The regulations will allow Lloyd's the dispensation provided in the directive to calculate the solvency margin on a basis net of commission – insurance companies must include commission paid – but the results will be scaled up by a factor to be fixed by the Secretary of State for Trade to take account of the overall level of commissions.

The major provisions of the directive requiring changes in UK law were implemented by regulations made on 29 September 1977, dealing with the classifications of general business and margins of solvency of companies, SI 1977 nos, 1552 and 1553, and on 17 May 1978, dealing with the authorisation of companies, SI 1978 no. 720. These latest draft regulations will complete the application of those major provisions to Lloyd's.

Some of the secretary of state's intervention powers in part II of the Insurance Companies Act 1974, which have not applied to Lloyd's previously, will be exercisable if Lloyd's fails to meet its obligations under these regulations or under section 74 of the act. Section 74 covers the deposit of accounts.

Copies of the draft regulations, 'The Lloyd's (General Business) Regulations 1979', are obtainable from HMSO, price 20p. The EEC directive is 73/239/EEC (*Official Journal* L228, 16 August 1973), on the taking up and pursuit of the business of direct insurance other than life insurance.

Minister reassures consumers on farm prices

Agriculture minister Peter Walker told consumer organisation representatives on 11 June that he too wanted to see a price freeze for products in structural surplus within the community so that they were eventually eliminated.

The minister met the group to discuss the negotiations which resumed in Luxembourg on 18 and 19 June, on the European commission's proposals for farm prices in 1979/80. Mr Walker assured them that he strongly supported the commission's proposal for a freeze in EEC farm prices. He too was extremely worried by the size of the community surpluses and the massive cost which these imposed on the community as a whole and the UK in particular.

He told the representatives that he intended to participate in the council negotiations in a positive and constructive manner, but would press the arguments for restraint on support prices and the cost of the common agricultural policy with the utmost force and determination.

Mr Walker also told them that he wished for a closer dialogue between consumers and producers. It was vital in the interest of both that a proper balance was achieved between the two.

EEC indicative ceilings for imports from Efta

The UK has been informed that community imports of the following goods have reached 75 per cent or more of the indicative ceilings level for 1979 (see *Trade and Industry*, 2 March):

Order no.	Country of origin	CCT heading/Description
		48.15 B
IS12	Sweden	Other paper and paperboard, cut to size or shape

Council regulation 986/79 of 14 May (*Official Journal* L123, 19 May) suspends the application of the indicative ceilings established earlier this year (see *Trade and Industry*, 2 March) for imports of the following goods;

Order no.	Country of origin	CCT heading/Description
		ex 48.01 CII
IN2	Norway	Kraftliner paper and board
		55.05
IP3	Portugal	Cotton yarn
		ex 73.15 B
IS19	Sweden	Other alloy steel

New EEC documents

This list of EEC documents was deposited in the House of Commons in the seven days to 7 June 1979 (commission reference numbers, where appropriate, are given in parentheses). These documents are available for consultation at the European Communities Commission Information Office, 20 Kensington Palace Gardens, London W8 4QQ.

EEC draft instruments

5869/79. Proposals for council regulations (EEC): extending the 1978–79 marketing year for beef and veal; fixing the basic price and the buying-in price for cauliflowers for May 1979; extending the 1978–79 milk year and amending regulations (EEC) 880/77 and 1078/77 (COM(79)189).

6117/79. Proposal for a council regulation amending, with respect to the Italian lira, regulation (EEC) 878/77 on the exchange rates to be applied in agriculture (COM(79)201).

6166/79. Proposal for a council regulation (EEC) amending regulation (EEC) 471/76 as regards the period of suspension of the application of the condition on prices governing the importation into the community of fresh lemons originating in certain Mediterranean countries (COM(79)175).

6994/79. Proposal for a council decision concerning chlorofluorocarbons in the environment (COM(79)242).

6995/79. Proposal for a council directive on the limit values for discharges of aldrin, dieldrin and endrin into the aquatic environment; proposal for a council directive on the quality objectives required for the aquatic environment into which aldrin, dieldrin and endrin are discharged (COM(79)243).

7003/79. Draft council regulation (EEC) temporarily suspending the autonomous common customs tariff duties on a number of agricultural products (COM(79)246).

7015/79. Proposal for a council decision on notification by the member states of withdrawal from the convention on the valuation of goods for customs purposes of 15 December 1950 (COM(79)247).
7054/79. Draft council regulation temporarily suspending the autonomous common customs tariff duty for mechanically propelled aircraft of an unladen weight exceeding 15 000 kg, falling within subheading ex 88.02 BII(c) (COM(79)259).

Consultative documents

5893/79. Development co-operation – relations with the NGOs: 1978 co-financing (COM(79)112).
5887/79. Commission communication to the council concerning consultation on migration policies vis-a-vis third countries (COM(79)115).
5985/79. Recommendation for a council decision authorising the Commission of the European Communities to participate in the negotiations to conclude a convention on the conservation of wildlife and the natural environment (COM(79)146).
5875/79. First actions of co-operation with certain developing countries in the field of energy (COM(79)155).
5876/79. Co-operation with developing countries in the field of energy – inventory of operations already undertaken at international level and by the member states (COM(79)189).
5974/79. Withdrawal of certain proposals for directives on the approximation of the laws of the member states relating to foodstuffs (COM(79)128).
6040/79. Supplementary estimates of the European Parliament (PE 57.074/Fin).
5720/79 Cor. 1. Communication from the commission of the European Communities concerning proposals on policy with regard to agricultural structures (COM(79)122/2).
6215/79. Proposal for a transfer of appropriations between chapters within the commission's budget estimates for 1979 (aid to disaster victims – article 950) (COM(79)207).

New legislation

The legislation listed below has been published in the *Official Journal of the European Communities* as indicated against each item. The *Official Journal* is published in English and copies should be obtained from HMSO. Information about the items listed, in so far as other member states' requirements are concerned, is available to British exporters from Department of Trade, Export Services and Promotions Divisions, Export House, 50 Ludgate Hill, London EC4M 7HU, tel. 01-248 5757 ext. 7174/482/408.

Common agricultural policy

The texts of the following regulations which affect the various agricultural sectors in the EEC have been published in the *Official Journal of the European Communities*.

Hops. Regulation (EEC) 1084/79 amending regulation (EEC) 1460/73 on applications for reimbursement of aid granted by member states to recognised groups of hop producers (*Official Journal* L135, 1 June 1979).
Regulation (EEC) 1105/79 amending the annex to regulation (EEC) 3077/78 on the equivalence with community certificates of attestations accompanying hops imported from non-member countries (*Official Journal* L138, 6 June 1979).

Wine. Regulation (EEC) 1092/79 amending regulation (EEC) 2005/70 on the classification of vine varieties (*Official Journal* L136, 2 June 1979).
Regulation (EEC) 1129/79 amending regulation (EEC) 2822/78 as regards the list of authorised vine varieties which may be used for new plantings and replantings until 30 November 1979 (*Official Journal* L140, 8 June 1979).

Sugar. Regulation (EEC) 1106/79 amending the text relating to the conversion rate to be applied in respect of the amount under 1(c) of the annex to regulation (EEC) 3016/78 laying down certain rules for applying conversion rates in the sugar and isoglucose sectors so that it reads as follows:
'Representative rate applicable on the day on which the quantity in question was refined.' (*Official Journal* L138, 6 June 1979).

Fruit and vegetables. Regulation (EEC) 1116/79 establishing the standard average values for customs purposes of citrus fruits and apples and pears (*Official Journal* L139, 7 June 1979).

Seeds. Regulation (EEC) 1117/79 specifying certain maize in the seeds sector to be subject to the system of import licences provided for in article 4(1) of regulation (EEC) 2358/71 (*Official Journal* L139, 7 June 1979).
Regulation (EEC) 1118/79 supplementing, as regards seeds, regulation (EEC) 193/75 laying down common detailed rules for the application of the system of import and export licences and advance fixing certificates for agricultural products. In article 1 of regulation (EEC) 193/75, after the eleventh indent, a further indent as follows is added:
'. . . Article 4 of regulation (EEC) 2358/71 (seeds).' (*Official Journal* L139, 7 June 1979).
Regulation (EEC) 1119/79 laying down special provisions in respect of hybrid maize for the implementation of the system of import licences for seeds (*Official Journal* L139, 7 June 1979).

Flax and hemp. Regulation (EEC) 1128/79 amending regulation (EEC) 771/74 laying down detailed rules for granting aid for flax and hemp (*Official Journal* L140, 8 June 1979).

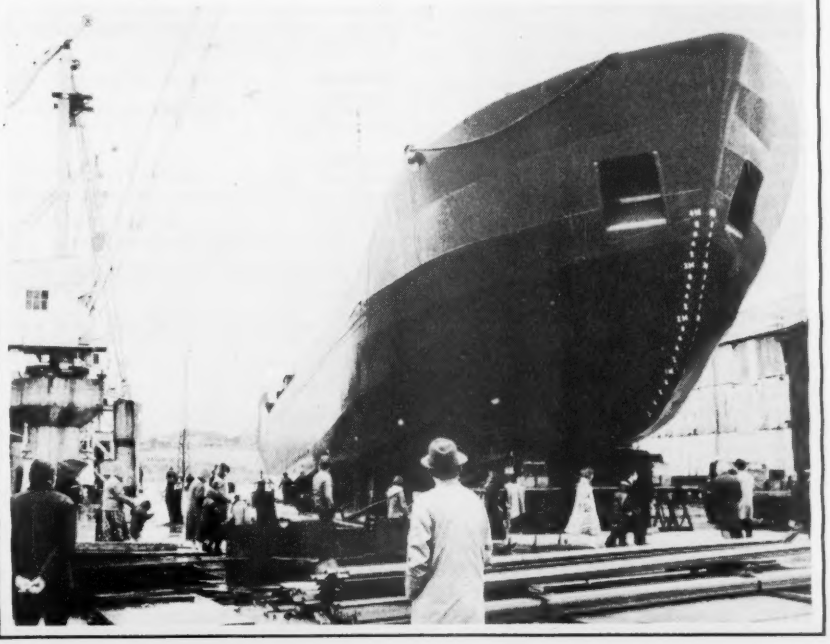
Cattle, beef and veal. Regulation (EEC) 1136/79 laying down detailed rules for the application of special import arrangements for certain types of frozen beef intended for processing and repealing regulation (EEC) 572/78 (*Official Journal* L141, 9 June 1979).
Regulation (EEC) 1137/79 amending regulation (EEC) 571/78 concerning arrangements for import and export licences in the beef and veal sector (*Official Journal* L141, 8 June 1979).

Imports from non-member states

The *Official Journal of the European Communities* L138, 6 June 1979, contains the texts of the following decisions which authorise the relevant states to refuse entry to the specific goods. The decisions relate to varying periods; full details are set out in the relevant decisions.
Decision 79/512/EEC authorising Ireland not to apply community treatment of shirts, T-shirts, lightweight fine knit roll, polo or turtle necked jumpers and pullovers, undervests and the like, knitted or crocheted, not elastic or rubberised, other than babies' garments, of cotton or synthetic textile fibres; T-shirts and lightweight fine knit roll, polo or turtle necked jumpers and pullovers of regenerated textile fibres, falling within heading ex 60.04 of the common customs tariff (Nimexe codes 60.04-01, 05, 13, 18, 28, 29, 30, 41, 50, 58) (category 4), originating in Thailand and in free circulation in the other member states.
Decision 79/513/EEC authorising Belgium, Luxembourg and the Netherlands not to apply community treatment to men's and boys' woven industrial and occupational clothing; women's, girls' and infants' woven aprons, smock-overalls and other industrial clothing (whether or not also suitable for domestic use), of wool, of cotton or of man-made textile fibres, falling within headng ex 61.01 and sub-heading ex 61.02 B of the common customs tariff (Nimexe codes 61.01-13, 15, 17, 19; 61.02-12, 14) (category 76), originating in Bulgaria and in free circulation in the other member states.

Spillers commissions grain carrier

London Miller, the latest in Spillers' fleet of grain carriers, being launched at the James Cook shipyard at Wivenhoe, Essex. The ship is designed primarily to carry grain between the UK and the rest of Europe.



UK allocations from ERDF: the detail

As announced last week (*Trade and Industry*, 15 June, page 483), contributions of £27.4 million from the European regional development fund towards the cost of projects in the United Kingdom have been made by the European commission. This brings the total fund contribution to UK projects since the inception of the fund in 1975 to £290.6 million. The following is a detailed description of the projects.

The £27.4 million relates to five industrial and 85 infrastructure projects located in the UK assisted areas and is allocated as follows:

Region	£000's
England	
North	8 479
North west	4 446
Yorkshire and Humberside	557
South west	79
Total England	13 561
Northern Ireland	5 312
Scotland	4 668
Wales	3 837
Total UK	27 378

North

Total aid £8 479 050

Infrastructure projects
Tynedale, Northumberland, Northumbrian Water Authority £7 383 000
(construction of reservoir and connecting aqueducts, Kielder Reservoir)
Teesside, Cleveland, Cleveland County Council £109 650
(construction of road, Cleveland Northern Route, connecting industrial complexes and estates with national trunk roads and local ports)

Aid is given under a global application to the following projects:

County: Cleveland
Saltholme, Stockton-on-Tees
(established on new 275/132 KV supply at Saltholme by constructing single switch 275 KV substation in the Hartlepool-Lackenby circuit)
Wolviston Back Lane By-Pass, Stockton-on-Tees
(development of by-pass to link industrial centres to trunk road networks and remove heavy industrial traffic from narrow residential estate road)

Total aid in respect of 2 infrastructure projects (global application) £986 400

Total (all infrastructure projects) £8 479 050

Yorkshire and Humberside

Total aid £557 065

Infrastructure projects

Grimsby, Humberside, Anglian Water Authority £314 665
(construction of a new sewage outfall and the extension of pumping stations and mains to eliminate gross pollution and minimise flood risks)

Rotherham and Doncaster, South Yorkshire, British Waterways Board £242 400
(river navigation improvement, widening locks to allow passage of larger barges carrying ores, solid fuel and other cargoes)

North west England

Total aid £4 445 810
Industry projects
Runcorn, Cheshire, Schreiber Industries Ltd (bedroom and kitchen furniture)

Eccles, Greater Manchester, Lankro Chemicals Group Ltd
(production of chemical intermediates and speciality chemicals)

Total aid in respect of 2 industry projects £3 066 700

Infrastructure projects
Burnley and Pendle, Lancashire, Lancashire County Council £976 600
(construction of road to provide fast access between newly developed and older established industrial districts within Lancashire)

Wigan, Greater Manchester, North West Water Authority £36 360
(sewage treatment works extensions to reduce gross pollution of a river by centralising treatment on a single works)

Aid is given under a global application to the following project:

Lancashire
Hyndburn, Martholme Sewage Treatment Works
(provision of inlet works, primary settlement and storm tanks, aeration plant and associated pumping stations)
Total aid in respect of 1 infrastructure project (global application) £366 150

South west England

Total aid £79 185
Infrastructure project
Liskeard, Caradon, Cornwall, South West Water Authority £79 185
(reservoir and ancillary works)

Scotland

Total aid £4 667 576

Infrastructure projects
Aid is given under a global application to the following projects:

Central region
Sterling
(construction of by-pass on A811 road at Drymen)

Sterling
(improvements to A821 road – Kilmahog Railway Bridge, near Callander)
Grangemouth, Grange Dock
(installation of new electric derrick crane)

Highland region
Dingwall and Inverness, Muir of Ord and Gairloch Districts
(improvements to A832 road, Lochluichart to Loch a Chuilin and at Loch Maree)
Thurso, Wick and Invergordon, Sutherland District
(improvements to A836 road, Aultnagar and Auchinduich, Henman's Bridge and Bobtail Cottage, and at Halladale Bridge)
Inverness and Portree, Inverness, Skye and Lochalsh Districts
(improvements to A887 road, Dundreggan and Torgoyle and A850 road, Kyleakin and Broadford)
Inverness, Badenoch and Strathspey District
(improvements to A86 road, Calder Bridge and Laggan Bridge)
Thurso and Wick, Caithness District
(improvements to A895 road at Spittal Hill)

Lothian region
Edinburgh, Fairmilehead Filter Works
(extension of filter works)
Livingston, Brucefield South Industrial Estate
(provision of access road, service roads and sewers, Stage II)

Strathclyde region
Glasgow, Thornliebank, Spiersbridge Industrial Park
(provision of access road, water and electricity)
Lanark, Caldwellside Industrial Estate
(provision of roads, water supply and sewerage)
Hamilton, Hillhouse Park Industrial Estate
(provision of roads and associated drainage)
Ayr, Heathfield Industrial Estate
(provision of internal spine road and sewerage system)
Cumbernauld, Cumbernauld New Town
(provision of additional water supply)
Cumbernauld, Cumbernauld New Town
(construction of service reservoir)
Rothesay, Argyll and Bute
(improvements to A844 road, Kames, Isle of Bute)

Tayside region
Blairgowrie, Blairgowrie Industrial Estate
(provision of access roads, drainage and electricity supply)
Blairgowrie
(improvements to A93 road, Spittal of Glenshee and north of Cally bridge)
Perth
(improvements to A827 road, Ballinluig Bridge, near Pitlochry)

Western Isles region
Lewis
(improvements to A859 road, Balallan and Tarbert)
North and South Uist and Benbecula
(improvments to A867/A865 road, Lochmaddy and Lochboisdale)
Lewis
(improvements to A857 road, Barvas and Port of Ness)
Lewis
(improvements to A858 road, Garynahine and Barvas)
Benbecula
(improvements to B892 road, Balivanich and Creagorry)
North Uist
(improvements to A865 road, Lochmaddy and Clachan)
North and South Uist, Barra, Benbecula and Harris
(construction of surfaced road to townships of Ardslave-Manish, Aird, Bruernish, Strome and Hosta)
Lewis
(improvements to B8060 road, Balallan and Eishal)

Total aid in respect of 28 infrastructure projects (global applications) £4 667 576

Wales

Total aid (all projects) £3 836 759

Infrastructure projects
Aid is given under a global application to the following projects:

Clwyd
Chester/Shotton, A548 road
(widening and realignment schemes)
Colwyn Bay
(construction of second phase of an indoor tourist holiday complex)
Deeside, A5118 road
(widening and realignment scheme)
Deeside
(development of industrial estate infrastructures, provision of public weighbridge with traffic ways for weighing goods on industrial Vehicles)
Rhyl, A547 road
(widening and realignment scheme)
Ruthin
(provision of tourist craft workshops)
Wrexham
(development of industrial estate infrastructures, roadworks, and provision of sewers)

Dyfed
Carmarthen, B4306 road
(realignment and replacement of sub-standard bridge)
Carmarthen
(extension of infrastructure works on existing industrial estate, roadwords and sewers)
Llanelli, B4303 road
(improvement scheme)
Milford Haven
(dredging and other works at Milford Haven Docks to continue use of docks, phase 1)
Pembroke Dock
(development of industrial estate infrastructure, roadworks, sewers, and services)
Tumble
(development of industrial estate infrastructure, roads, sewers, fencing etc)
Tumble, Cardigan, Carmarthen, Llandysul, Lampeter, Aberystwyth, Llandeilo
(improvement of various roads)
Tenby
(cliff stabilisation to protect tourist highways)

Mid Glamorgan
Bargoed
(improvement of water main to increase carrying capacity)
Bargoed
(extension of infrastructure works to enable further industrial land to be developed)
Bridgend/Llantrisant/Pontypridd, A473 road
(road improvements)
Bridgend
(widening of road to industrial estates)
Bridgend
(improvement of access road to industrial estate)
Ferndale
(widening of road bridge to assist industrial traffic flow)
Merthyc Tydfil
(improvement of road to facilitate access to industrial sites)
Merthyr Tydfil
(construction of access road to industrial estate)
Pontlottyn
(construction of access roads to industrial estate)

South Glamorgan
Cardiff
(road improvements to Cardiff Dock)
Cardiff
(improvement to surface water drainage system to Ferry Road leading to industrial areas)
Cardiff, Queen Alexandra Docks
(construction of new loading facilities)

West Glamorgan
Pontardawe/Ystradgynlais
(construction of new road bridge at Godrergraig)
Swansea, B4295 road
(road improvement at Waunarlwydd)
Swansea, A4067 road
(road improvement to form by-pass of bottleneck on existing route at Morriston)
Swansea
(redevelopment of Swansea South Dock area as a tourist amenity)
Swansea
(infrastructure works on industrial development sites, including roadworks, drainage and sewerage works)
Swansea
(new water and electricity supplies to Briton Ferry/Swansea industrial area)

Gwent
Pontypool
(development of a tourist leisure amenity and museum)
Pontypool
(road realignment scheme)
Tredagar/Ebbw Vale
(construction of water and sewer mains and manholes to serve industrial estates)

Gwynedd
Caernarfon
(construction of new carriageway at Caeathro)
Caernarfon, A4086 road
(road widening and realignment scheme)

Powys
Welshpool
(new electricity supply to industrial estate)

Total aid in respect of 39 infrastructure projects (global application)

Northern Ireland

Total aid £5 312 070

A. **Infrastructure projects**

Belfast, the Post Office £2 039 520
(telephone exchange switching equipments, Seymour Unit, Stage III)

Aid is given under a global application to the following projects:

Belfast
Belfast
(additional deepening work at Donegall Quays; infilling of York Dock; provision of dry bulk discharge facilities at Richardson Wharf; modernising of Airport Wharf)
Belfast
(installation of 2 × 30 MVA shunt reactors at Hannahstown substation)

Antrim
Antrim
(provision of modern electronic telephone switching equipment in new telephone exchange building)

Fermanagh
Enniskillen
(provision of 250 m long through-pass road and bridge over the River Erne, Stage I)

Londonderry
Londonderry, Foyle Bridge, Eastern Approach
(construction of 1.2 km approach road to the proposed new Foyle Bridge)
Londonderry
(construction of 2.8 km of Steels Town Road)
Limavady
(provision of new buildings, plant and machinery at Limavady substation)

Total aid in respect of 7 infrastructure projects (global appication) £2 150 100

B. **Industry projects**

Aid is given under a global application to the following projects:

Down
Bangor, GEA Air Exchangers Ltd
(heat exchangers, engine coolers and ancillary equipment)
Castlereagh, Hughes Tool Company Ltd
(mining, construction and oil well drilling equipment)

Londonderry
Coleraine, Spanboard Ltd
(wood chipboard and laminated board)

Total aid in respect of 3 industry projects (global application £1 122 450

Overseas trade news

Big effort required from UK companies in Asean market – Parkinson

There is a lot of room for an improvement in Britain's trading performance with the Association of South-East Asian Nations (Asean) countries, all of which have growth rates of at least 6 per cent a year, said Minister for Trade Cecil Parkinson last week following his return from a two-week tour of the region. 'This is an area of the world where a bigger effort is needed from British companies but where the prospects and potential rewards are immense', he said.

Mr Parkinson had led the British delegation during the final stages of the United Nations conference on trade and development (Unctad V) which closed in Manila on 3 June. He also had bilateral trade talks with ministers in Jakarta, Kuala Lumpur and Singapore as well as in Manila.

'The possibilities for investment in the area should now be looked at particularly closely,' he explained, 'especially with the more benevolent approach to overseas investment announced by the Chancellor in his budget. In each of the four countries I visited the message was the same: we want to buy more of your goods, but we want investment and technology to develop our own manufacturing capacities as well.

'In looking at the investment prospects it is important to recognise the gradual emergence of Asean as an integrated market of some 250 million people into which locally-based manufacturers will be able to sell.'

He pointed out that there is 'a great store of affection for Britain in all of the Asean countries – not only in the two Commonwealth states', and a general desire to diversify from their dominating suppliers – Japan and the United States.

Indonesia

In Indonesia, Mr Parkinson found, a small but growing British market. It is by far the largest Asean country with a population of over 130 million. British companies have been looking at a variety of large projects, including power generation and transmission and telecommunications and earth satellite installations. There is interest in urban transport and earth moving construction equipment and the Indonesian government is looking particularly for help with the rehabilitation of plantations and estates.

Philippines

Although, like Indonesia, the Philippines is not a traditional matket for the UK. Mr Parkinson saw that British firms are making efforts against strong United States and Japanese competition in a country where there are good opportunities for trade in machinery and capital goods if price and delivery are right. British companies are currently showing active interest in telecommunications, a copper smelter, a diesel engine assembly plant, power generation, an integrated steel mill and the Manila light railway transit system.

Malaysia

British trade with Malaysia is building up rapidly – UK exports rose by 27 per cent last year. British companies still have considerable investments in the highly efficient Malaysian plantation industry and Mr Parkinson found that there are good prospects related to some infrastructure projects – power generation and transmission, ports and airports, and an aluminium smelter. There is a general demand for machinery and marine equipment but the Malaysians are also seeking the transfer of technology – for example, in shipbuilding, the construction of police patrol craft.

Singapore

After a poor British performance in the past decade, Singapore now represents a traditional market which is being rebuilt. As Mr Parkinson found, there are opportunities in almost every industrial sector. Singapore is looking for capital equipment and investment to up-grade its industry which, because of a small workforce, must be increasingly capital intensive. British companies have recently won a consultancy for the mass rapid transport system and are interested in airport development and power generation projects.

Thailand

It was not possible for Mr Parkinson to fit in a visit to Thailand which is the other important member of the Asean. Prospects for British trade with Thailand are good especially in the area of machinery and transport equipment. There are additionally a number of major projects under consideration in which British firms have an interest including ports and air-ports; railways, including a mass rapid transit system for Bangkok; sewage and water works as well as power generation projects.

Duke of Kent to open Export United conference

An Export United conference on involving shopfloor employees in a firm's exports will be opened by the Duke of Kent on 28 June in London. Cliff Michelmore, the radio and television personality, will also take part in the conference.

The Duke will speak as vice-chairman of the British Overseas Trade Board and a patron of Export United to an invited audience of more than 100 directors and senior managers from top exporting companies. His speech will be followed by case studies describing how Export United campaigns have helped Reckitt and Colman, Vickers Engineering Group, Thorn Electrical Industries and Smiths Industries. Speakers will show how a well-planned internal communications programme can stimulate support for exports throughout a company's workforce and demonstrate the increasing importance major companies are attaching to internal communications.

The conference, sponsored by the British Overseas Trade Board in association with the Greater London Council and the London Chamber of Commerce and Industry, will be held at County Hall.

Joint chairmen will be Robert Vigars, chairman of the GLC, and Douglas King, chairman of the London chamber of commerce. An open discussion, led by Cliff Michelmore, will follow the presentation of case studies and comments will be invited from a panel of specialists representing the Advisory, Concilliation and Arbitration Service, the Trades Union Congress, the news media and management.

More than 2800 companies now support Export United which was launched in January 1978 as a continuation of Export Year. Export United generally takes the form of a special campaign run within a company. It is supported by the Association of British Chambers of Commerce, the Confederation of British Industry, Committee on Invisible Exports, Institute of Export, TUC and BOTB and its advisory council.

New editions of 'Hints to exporters'

Revised editions of the 'Hints to exporters' booklets on Indonesia, Italy, Panama, Federal Republic of Germany and West Berlin, and Argentina are now available.

British exporters can order the booklets by post, accompanied by the appropriate remittance, from the Department of Trade, Publications Sales Unit, Export House, 50 Ludgate Hill, London EC4M 7HU, at £1 per copy, plus postage and packing as follows: one copy – 20p; two to four copies – 30p; five to seven copies – 40p; and more than seven – post free.

Copies may also be bought by personal callers at Export House and at the regional offices of the Department of Industry, the Scottish and Welsh Offices and from the Department of Commerce, Belfast.

BOTB looks for closer ties with trade associations

In a bid to improve co-operation with trade associations the British Overseas Trade Board is organising a morning seminar – 'Trade associations and exporting' – in London on 22 June.

The board believes the seminar will provide a useful opportunity for trade associations and BOTB to get together to consider how associations might be able to improve export services to members.

BOTB chief executive Jim Wilks will chair the seminar, which will be held at the Mount Royal Hotel, Bryanstone Street. He will describe the services the government provides for exporters. Representatives of trade associations active in exporting, the British Furniture Manufacturers' Exports Ltd and the Machine Tools Trades Association, will be talking about the experience of their own associations.

Between now and the end of the year, UK firms will participate in over 200 overseas fairs in joint ventures organised by BOTB and trade associations. Trade associations are also involved in over 250 BOTB-sponsored inward and outward missions that take place every year.

Export office procedure courses in Scotland

Dates and locations of export office procedure courses in Scotland organised by the Training Services Agency have been announced for the second half of 1979.

The courses are designed to enable students to gain experience in office procedure and documentation associated with exporting and to show them how to pass on this knowledge in the most effective way. The syllabus assumes that students have experience of clerical work but not necessarily a knowledge of export techniques. Sessions cover such subjects as bills of lading, marine insurance, contracts, letters of credit, bills of exchange, certificates of origin, customs declaration, air freighting, containerisation, and the EEC.

The course programme is as follows:

Date commencing	Locations
21 August 1979	Hawick Chamber of Commerce
4 September 1979	Glasgow Chamber of Commerce
2 October 1979	Glasgow Chamber of Commerce
9 October 1979	Dundee Chamber of Commerce
23 October 1979	Perth Chamber of Commerce
6 November 1979	Glasgow Chamber of Commerce
20 November 1979	Dundee Chamber of Commerce
4 December 1979	Glasgow Chamber of Commerce

Inquiries should be addressed to Training Services Agency (OS1-B), 9 St Andrew Square, Edinburgh EH2 2QX, tel. 031-225 8500 ext. 219.

Missions win orders in S. America and Far East

That missions mean orders is underlined by results announced by two chambers of commerce.

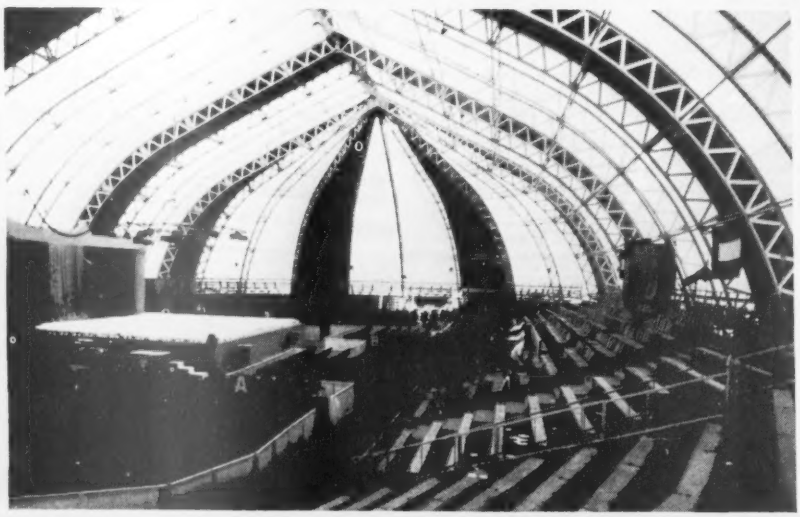
The Birmingham chamber's latest business mission to the Far East visited Singapore and Indonesia. It was the chambers eleventh visit to Singapore and the mission was extremely well received and several members had orders confirmed in both industrial and consumer sectors.

The Manchester chamber reported that a group of businessmen returned from a sales trip to South America with at least £750,000 of firm orders in their pockets – and the promise of orders worth many million more in the pipeline.

One of the members took on-the-spot orders worth £350,000 with another £600,000 to be confirmed and another took an order worth £30,000, to be completed within the next six months, with a promise of further orders worth £100,000 a year.

GKN supplies seats for Sharjah centre

This expo centre in Sharjah has 6000 Millstand seats from GKN Mills Building Services and is believed to be the first prestigious cultural and entertainment centre in the UAE. The centre has been the venue for several exhibitions, shows and a circus. GKN originally supplied 4000 seats, which had to be assembled in under five days. These proved so popular that the company was asked to supply a further 2000.



British embassy, Costa Rica

In the commercial representation guide published with *Trade and Industry*, 18 May, the address for the British embassy in Costa Rica should have read:
British Embassy, 3202, Pasco Colón, Apartado 10.056, **San José**, Costa Rica. Tel. 21-55-66, telex 2169 a/b 2169 PRODROM.

Notices to importers

Issued by the Department of Trade. Telephone inquiries should be addressed to the number at the end of the notice.

1742: imports of gold coins and medals

Notices to importers 1488, 1524, 1645 and 1675 described the licensing arrangements for the importation into the UK of gold coins, gold medals, gold medallions etc.

As already announced, these arrangements have now been varied and on and after 13 June gold coins, gold medals, gold medallions etc, other than those originating in or consigned from southern Rhodesia, may now be imported into the UK under the authority of the open general import licence (ie without the need for an individual import licence).

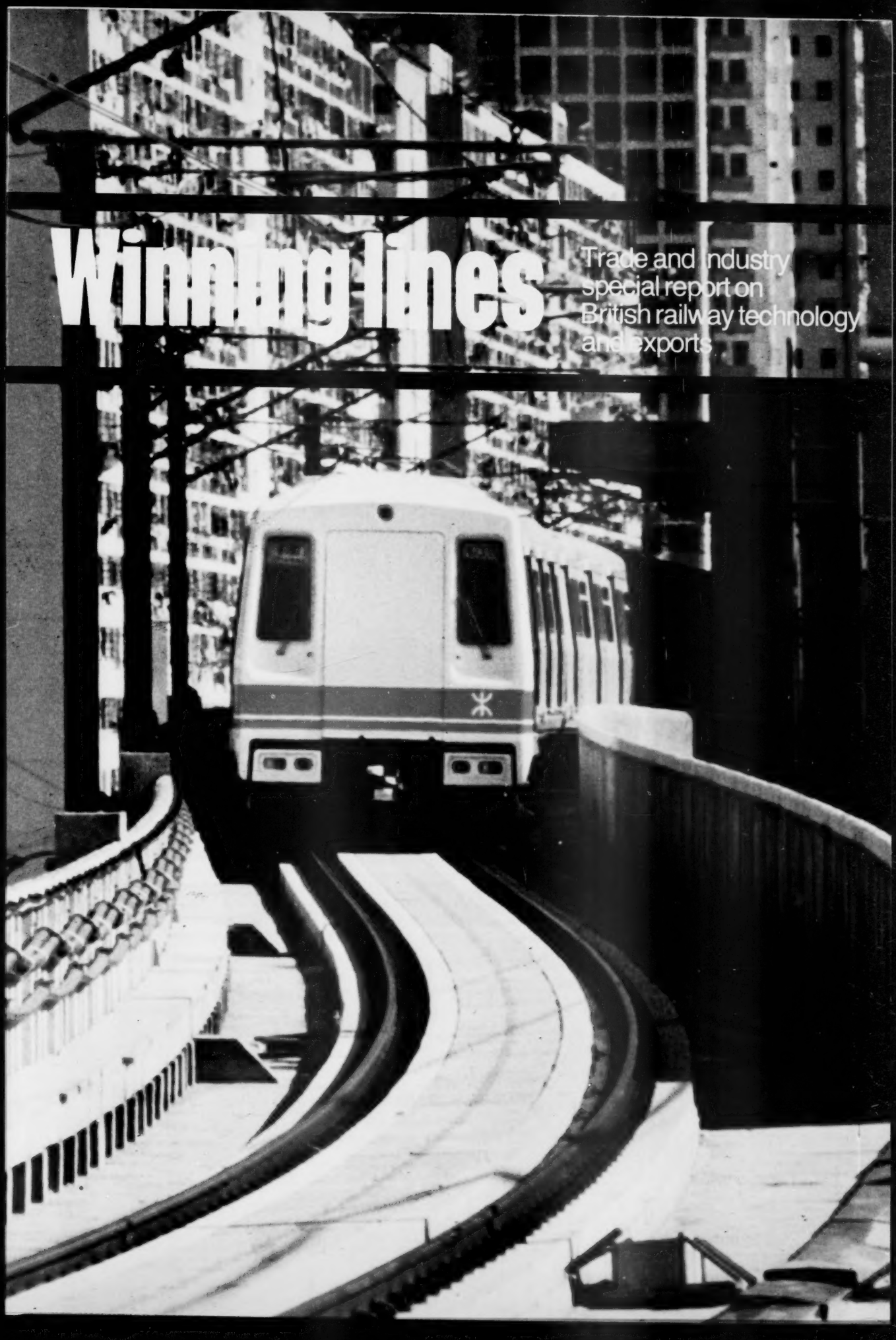
Inquiries: Import Licensing Branch, tel. 01-603 4644 ext. 362.

1743: importation of portable monochrome tv sets from the Republic of Korea

Notice to importers 1722 (*Trade and Industry*, 5 January) set out the arrangements and quota level for the importation into the UK of portable monochrome television sets originating in the Republic of Korea for the period 1 January to 30 June.

Traders should note that this restriction was removed with effect from 22 June 1979 but are reminded that restrictions may be re-imposed if circumstances so warrant. Such television sets with cathode-ray tubes whose bulb diagonal measurement is 38 cm or less will however still be subject to surveillance licensing arrangements, as set out in notice to importers 1695 (*Trade and Industry*, 4 August 1978).

Inquiries: 01-603 4644 ext. 280.


Winning lines
Trade and Industry
special report on
British railway technology
and exports

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Winning lines

Trade and Industry special report on British railway technology and exports

Published with the 22 June 1979 issue

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Winning lines

Cliff Moss, chairman of the Railway Industry Association of Great Britain and a director of Balfour Beatty, outlines the huge scope and manufacturing capability of Britain's railway industry.

Railway technology nowadays embraces so many engineering disciplines that it is hard to define the full extent of the railway industry with any precision. The basic core is easily identified; locomotives and rolling stock, rails and sleepers, braking and signalling equipment are unique to railways. But for many manufacturers railways are just one application for their products. For example, in electrification the lineside transformers and switchgear and associated remote control equipment have much in common with any electricity distribution system. The computers on which the latest signalling systems are based are standard units in widescale use elsewhere in industry. If the size of the railway industry is unclear, one thing is certain; in both the scope of its products and the markets which it serves the range of the railway industry's activities is wider than at any time in its 150 year history.

From the earliest days the railway industry has exported a substantial proportion of its products. The industry had a head start; having invented railways Britain had the only railway equipment factories in a world market which was expanding rapidly. This advantage was short lived as manufacture started up in the other industrialised nations, but it began a commitment to exporting in the railway industry which has continued ever since. For 100 years, the steam locomotive symbolised the export success of the industry. Few railways in the world have not operated at some time in their histories British-built locomotives. Similarly, other innovations in signalling, braking and track were rapidly converted into export opportunities.

By the early 20th century the industry was rapidly widening its technological scope. Electric traction was one example of this leading to an entirely new sector of the industry. Small pilot schemes in Britain provided the base for substantial export business. By 1939, Britain had supplied electric railway equipment to France, Denmark, Poland – one of the first turnkey projects for a complete electrification scheme – Spain, South Africa, India, Japan, New Zealand and several Latin American countries. Similarly, early experience with diesel traction immediately before and after the second world war resulted in substantial exports of diesel locomotives and trains in the 1950s and 1960s.

Thus there was a background of service experience with the latest equipment when, in 1955, British Rail itself began to modernise. This was the most concentrated modernisation programme ever. Between 1955 and 1970 British Rail replaced 18 000 steam locomotives with 3 000 diesel locomotives and 6 000 diesel trains. Electrified route mileage was doubled, 6 000 miles of line were resignalled with multiple-aspect colour light signals controlled from power signal boxes, and 6 000 miles of track were laid with continuous welded rail. At the same time, new generations of freight and passenger vehicles were introduced, providing greater comfort or higher capacity, higher speeds and better braking.

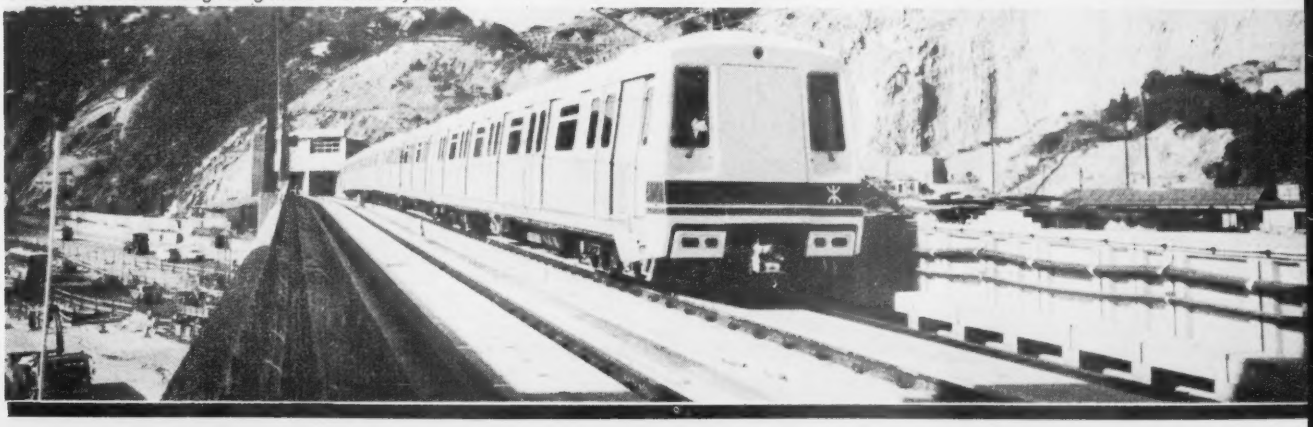
This BR Modernisation programme was the final stage in the creation of today's railway industry. It provided a testing ground for new equipment and techniques and a shop window for the industry to show its overseas customers. While most industries look to the home market as a show-case for their products, this aspect is particularly important for manufacturers of railway equipment. For example, it is very difficult to simulate the full rigours of service running on a passenger coach. In addition, railwaymen in export markets look for fully proven equipment, preferably based on products they can see in service. In the case of the BR modernisation programme, the shop window provided rapid results. One of the highlights of the programme was the electrification of the routes between London and Manchester and Liverpool which was completed in 1966. In the same year, a consortium of firms who had worked together on this project began a similar electrification scheme in Pakistan.

The modernisation programme also created a partnership between British Rail, its manufacturing workshops (now British Rail Engineering Ltd) and the railway industry. It is this partnership which has sustained the momentum of the modernisation effort through the last decade. The close links between supplier and major user have encouraged innovation ranging from the 125 mph High Speed Train and computer-aided signalling to simple, cost effective overhead line equipment for main line electrification and high capacity freight wagons. At the same time, such developments strengthen the industry's sales efforts overseas.

There is a similar relationship between the industry and its other major domestic customer, London Transport. From the world's first electric underground railway to the latest thyristor traction equipment and computer-aided train control systems there is a record of close technical co-operation between manufacturer and operator resulting in a level of performance which new metro and mass transit systems drawing on the most advanced aerospace technology have been unable to equal.

This brief run through the first 150 years of the railway industry should have highlighted one important and distinguishing factor. Throughout its history the industry has expanded steadily as new technologies have been applied to the basic combination of steel wheel on steel rail, and the history of the

Cover and below: Hong Kong Mass Transit System.



industry's trade association reflects this. It began as the Locomotive Manufacturers' Association as long ago as 1875 – the oldest trade association in Britain, – and developed into the Locomotive and Allied Manufacturers Association before taking its present title as the Railway Industry Association. Today it has a membership of over 40 companies representing a manufacturing workforce of over 15 000 in 60 factories and offices throughout Britain. The products of these companies cover virtually everything needed to create a railway from the track upwards and run it efficiently. The easiest way to demonstrate the scope of the industry is to start with its project capability and then progress to the various technical sectors which make up the whole.

Projects

Turnkey projects are the most publicised part of the railway business and often the most nebulous as far as firm contracts are concerned. While it is true that many countries are planning major railway construction or modernisation projects, such large schemes are highly vulnerable and few survive to become working railways, most staying firmly on paper. Of those that do progress further only a small proportion acquire the required funding and go out to tender. Even when the negotiations have been completed and the contracts signed, financial or political changes can bring work to a halt. Naturally, international competition is very fierce for the few projects which do survive, but the rewards are correspondingly high. Currently the British railway industry is working on three projects, the combined value of which approaches £0.5 billion.

Completion is imminent on the £100 million contract for the electrification of the 400 km west coast trunk line of the Taiwan Railway Administration. This scheme has included project management plus the supply of the overhead line equipment, the power distribution system, fleets of electric locomotives and trains, a complete telecommunications system, and upgrading of the track.

The second major project is for the Hong Kong Mass Transit Authority, which will also operate the system. Within the overall project, major sectors are put out for contract and British firms have dominated the bidding for the mechanical and electrical equipment. In 1976 British companies were awarded the contracts, totalling £130 million, for the metro cars, signalling and train control, power supply and control system, the track, maintenance depot and other equipment for the first stage of the Mass Transit Railway, while earlier this year, the same companies repeated their earlier success by taking the major contracts for the second stage of the Hong Kong scheme, the Tsuen Wan extension, worth a further £70 million.

The third project is still at an early stage. It covers the electrification of up to 600 miles of main line in Brazil at a cost of £150 million. The work includes resignalling and the supply of power equipment for locomotives built under licence locally.

Contracts such as these confirm that the business is there – provided that it can be identified and won. Industry has organised itself to meet this challenge in several ways. In addition to the specialist project management companies, consortia are formed to exploit specific opportunities, tender for contracts and handle resulting business. Also, in 1976, the industry, in collaboration with British Rail, London Transport and the Government formed the British Railway Industry Export Group (Briex) to identify opportunities and bring together the necessary management, manufacturing and financial resources.

Electrification

As in Britain, electrification projects on overseas railways are often connected with railway modernisation schemes. A topical example is the electrification and modernisation of the Kowloon–Canton Railway which provides the main transport link between the Crown Colony and the People's Republic of China. While main line electrification in Britain has slowed since the completion of electrification between London and Glasgow in 1974, suburban schemes – such as the King's Cross–Royston and St Pancras–Bedford services out of London – plus major overseas projects, have kept this important sector of the railway industry active and the key installation teams intact. In addition to the 'jumbo' projects such as Taiwan, there is a substantial demand for electrification equipment world-wide. These products are often based on equipment already proved in service in Britain – for example. the simple low cost overhead line equipment which reduced installation costs on British Rail by 29 per cent but is still suitable for operation at speeds over 125 mph. Electrification equipment is a sector where the British railway industry is able to sell into the industrialised nations. For example, in North America several mass transit systems rely for their power supply on rectifiers, transformers and switchgear produced in the UK. Similarly, a British company is responsible for engineering the overhead line equipment for America's ambitious northeast corridor electrification programme. The actual lineside equipment is only a part of the value of an electrification programme; increasingly, the power supply system is associated with a remote control network, while the signalling and telecommunications system is often renewed at the same time and, of course, fleets of new locomotives and trains will be required. The extent of this 'spin-off' can be seen from the example of one company which in 1978 was actively pursuing 40 railway electrification schemes in 18 countries. The potential value of the schemes to the company was estimated at £450 million – the total value to the railway industry as a whole was conservatively estimated at £1.7 billion.

Trackwork

Despite being the foundation of every railway, the trackwork sector of the industry is often overlooked. This is unfortunate because it is one of the fastest growing parts of the industry and another example of technical leads being transformed into substantial

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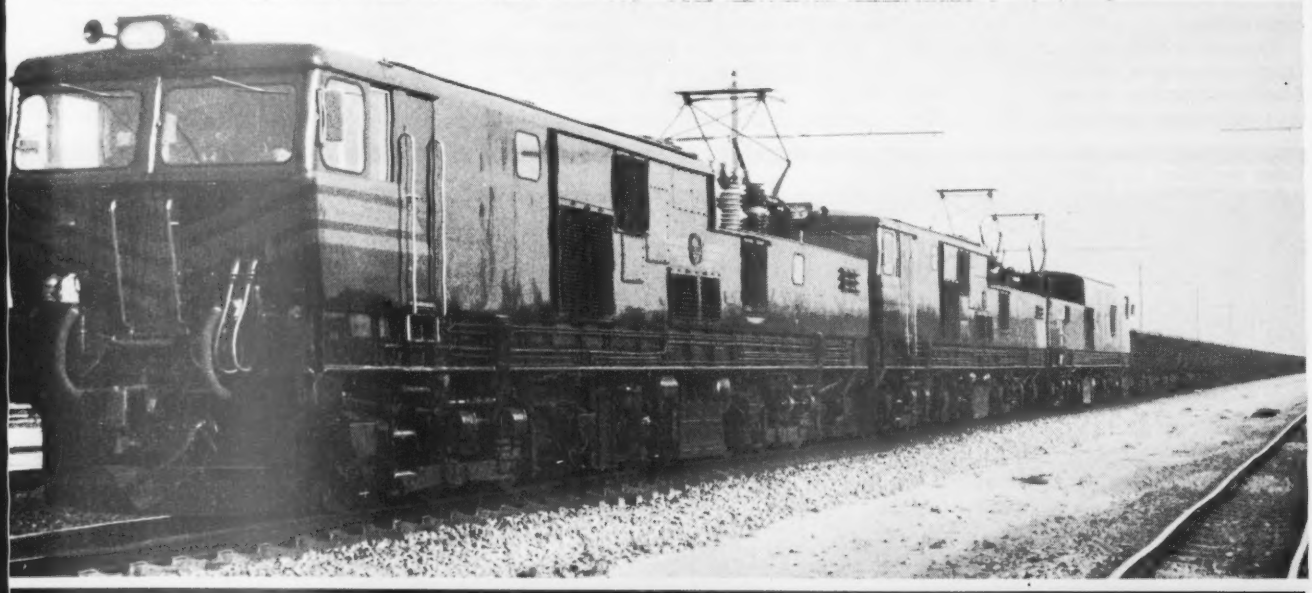

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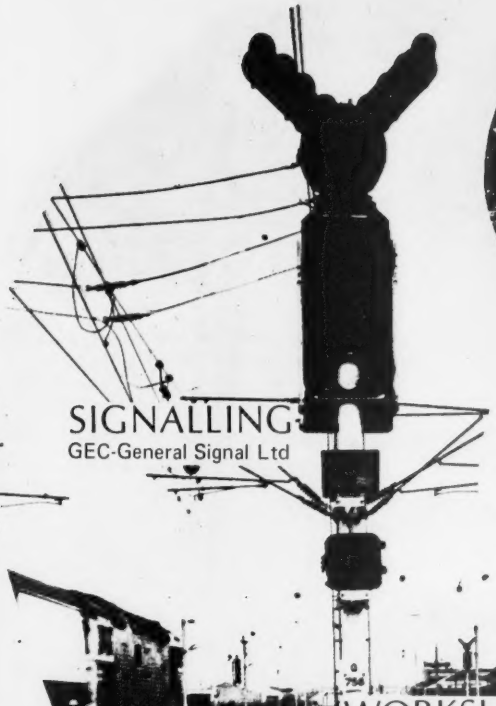

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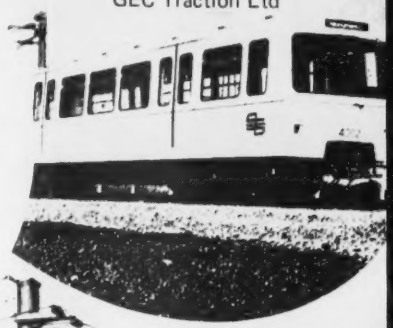

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export business. For example, one British company has built the largest concrete sleeper factory in the world in Iraq while the standard rail retaining clip on British Rail is in service on nearly 50 railways overseas, is manufactured in seven countries and new factories are being built in North and South America.

The rails themselves have also developed. A significant improvement in finish and freedom from faults has resulted from the change-over to continuously cast steel for rail production. Once again, technical superiority provides the key to enter markets in the industrialised nations and trials of British rails are now under way in North America. Supporting the sales of British track products is the fundamental research work, plus the unequalled practical experience of British Rail, with its unique combination of intensive local services, high speed passenger and heavy freight traffic. In particular, there is the expertise in high speed track recording which allows precise measurement to be made from a coach running at 125 mph.

Signalling and fare collection

Railway signalling is the classic example of the impact of the computer on an established industry. The modern power signal box with its on-line computer enables a few men to control hundreds of miles of route replacing tens of manual signal boxes. At the same time, the computer system can be linked to station arrival and departure boards and other passenger information devices. Such centralisation has only been made possible through innovation in telecommunications, with multiplexing allowing a single pair of cables to carry 30 or more separate signals in complete safety. The continuing resignalling programme in the domestic market has provided the springboard for a succesful export programme. In export markets there is a strong contrast between the advanced installations required for busy suburban areas and the needs of railway lines running for hundreds of miles through remote areas. These railways are often important, heavily-used routes for the export of natural resources such as coal and iron ore and the signalling has to maximise line capacity over perhaps 500 miles of single track. The combination of computer control and secure telecommunications has transformed operations on this type of line.

Another area of railway operation under the signal engineer's supervision which is being changed by the computer is fare collection. Ticket machines and automatic entry or exit gates are not new, but when combined with the latest microprocessors they offer the prospect of substantial savings through the reduction in fraudulent travel plus more effective financial control. Both British Rail and London Transport are working on schemes for the London commuter area and the underground which present a major technical challenge for the industry and substantial export opportunities.

Motive power and rolling stock

Locomotives, passenger coaches and wagons provide the best example of the way in which private industry and the British Rail manufacturing activities have come together in recent years to meet the needs of the home railways and those overseas. The High Speed Train is a classic case of what is being achieved from this close co-operation, with the vehicles built by British Rail and the diesel-electric power equipment, air conditioning and other systems supplied by the private sector. The recent notable export successes in East Africa have resulted in wagons built by British Rail mounted on bogies produced by private industry and identical diesel locomotives being manufactured on production lines in both sectors. These locomotives were in the switching locomotive category, a sector where British companies have exported over 100 units in the past three years.

London Transport relies on private industry for its rolling stock and this sustained home market has provided the base for major export successes in overseas markets. A notable example is in Hong Kong where the new mass transit railway and the modernisation of the main line railway system has resulted in orders to Britain for trains worth over £130 million. Technical innovation continues to make major improvements to the performance of British locomotives, trains and freight vehicles. For example, the rapid development of solid state devices such as thyristors has made diesel and electric power equipments simpler, more reliable and cheaper in real terms while at the same time providing higher performance and more sophisticated control. The growing use of aluminium and glass reinforced plastics results in lightweight vehicles and reduced manufacturing costs. The latest freight vehicles combine high capacity and fast running speeds which make them increasingly competitive with road traffic.

Equipment

Supporting these main areas of railway industry activity is a host of specialist suppliers who are often significant exporters in their own right. Their products range from major items of equipment such as rail cranes and inspection trolleys to rubber springing for rolling stock, door actuators and water purifiers for passenger coaches in tropical climates.

The annual turnover of the railway industry has been conservatively estimated at about £300 million of which around £120 million is exported. Despite fierce competition from other industrialised countries Britain's railway industry should enjoy a record year in 1979, both in orders booked and equipment delivered. Significantly, the industry's markets cover both the developing nations and the Western world. In the home market, which provides both a testing ground and a shop window for export equipment, the constant improvements in equipment introduced by British Rail and London Transport ensures the necessary manufacturing and technical base, with the various rolling programmes authorised by government giving the industry the confidence to invest in new equipment and manpower. Transport developments such as the Tyne and Wear Metro will also contribute export opportunities in due course. Today, Britain's railway industry is flourishing in one of the country's expanding industrial sectors, with an increasing turnover, new companies entering the business, new products and the widescale introduction of new technologies. The first railway industry in the world is firmly on the right lines, with a bright future.

Fast movers

Sir Peter Parker, chairman of both the British Railways Board and the British Railway Industry Export Group, explains the marketing of Britain's fast-moving railway technology.

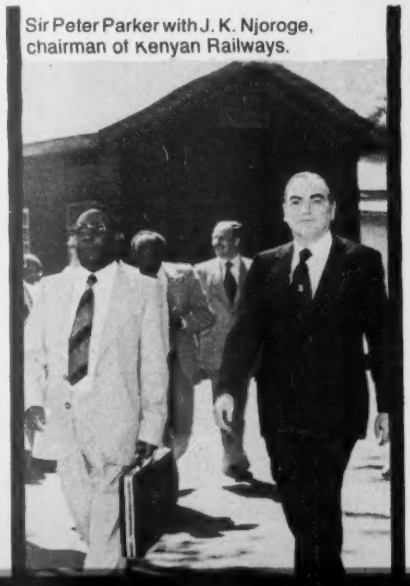
Britain's railways are thrusting through the technological barriers which will take them into the twenty-first century, and this advancing technology is backed by forceful marketing which is opening up new areas of passenger and freight business for British Rail.

As an offshoot of this progress, hardware and expertise are available for export to other railways throughout the world to help them to expand, modernise and rebuild.

Perhaps we in Britain are better placed than most others to assist other railway systems for we have had to create our own expansion from very limited resources, hence we link any new project closely to its cost and financial return. We have not been able to enjoy the luxury of building brand new railways from scratch to take fast new trains. Instead it has been a case of using the assets we have to much greater advantage through technological and engineering breakthrough.

Our Inter-City services are a good example. We were determined to build them on five points of quality – speed, reliability, frequency, regularity and comfort. Obviously we could achieve faster trains, as the Japanese have done, by simply building a new railway, but that was out on cost grounds, so we set about achieving speeds of over 100 mph through a train designed to give high-speed performance on existing or upgraded track.

The result is the Advanced Passenger Train (APT), soon to come into service, the outcome of years of work by BR's Research and Development Division at Derby. The concept of the APT developed from a programme of research into dynamics of rail



Sir Peter Parker with J. K. Njoroge, chairman of Kenyan Railways.

vehicles by the R&D Division, which enables the train to maintain high speeds on curves. But the train also has the advantages of offering more efficient use of energy and better train utilisation.

It was urgent for us to stave off air and road competition on our long-distance routes, so we could not wait for the APT. To meet our more immediate needs we developed the High Speed Train (HST), a conventional train with an operational maximum speed of 125 mph, new braking techniques to enable it to be brought to a stop from full speed within existing signalling distances, and of course the finest possible internal environment for passengers.

The HST has been a huge success, winning and holding new traffic on many routes, and enhancing the Inter-City image. The train already holds the world record for the fastest passenger train: 111.7 mph average start to stop, and it runs the fastest daily schedule in Europe with an average speed of 106.25 mph.

On the freight side we have built a service which is unbeaten for bulk haulage with payloads over 1000 tonnes commonplace. This is allied to a fast, reliable, scheduled wagonload Speedlink network to give customers the service they need. And of course the whole freight wagon fleet is monitored by the computerised Total Operations System (Tops) system to give economic wagon utilisation.

Add to this major track and signalling developments in the last generation, and electrification which has included the west coast main line from London to Glasgow – the backbone of the system – and vital suburban electrification, and you begin to realise what BR has done for itself and what the British railway industry can do for other railways.

Selling overseas

A thriving rail export business can only exist if the home business is buoyant, and British Rail is riding high. Three years ago the British Overseas Trade Board identified a substantial current and future demand for railway equipment and services overseas. There are many countries, particularly in central and south America, Africa, the middle and far east, which have a shopping list so long that it is not so much a question of which firm, but which country should take on an entire project.

To be of maximum benefit to these countries the many firms and organisations that make up the UK railway industry decided to set up a simple and efficient worldwide sales service. And so Briex – British Railways Industry Export group – was formed, a unique blend of public and private sector operators and manufacturers combining to build a railway bridge across the world.

Alongside British Rail and London Transport stand powerful names like Balfour Beatty Power Construction, British Rail Engineering, Brush Electrical Machines, BRE-Metro, GEC, Metro-Cammell, Stone-Platt Crawley, Westinghouse and the many firms represented by the Railway Industry Association. Policy is determined by a council with members from British Railways Board, London Transport Executive and the Department of Trade; the major railway manufacturers are represented individually and the wider interests of the many other members of the Railway Industry Association are represented by the director.

Perhaps the most vital role of Briex is as overall adviser in the early days of a railway project. It is equipped to identify the needs of railway authorities, mass transit operators and government departments responsible for transport and where possible can respond with a single British tender, submitted with maximum promotional and financial support from the government.

In three years Briex members have won many valuable projects. They include detailed work on motive power, rolling stock, electric traction equipment, overhead line equipment, signalling, telecommunications and in many other fields involving a complete cross-section of the railway industry.

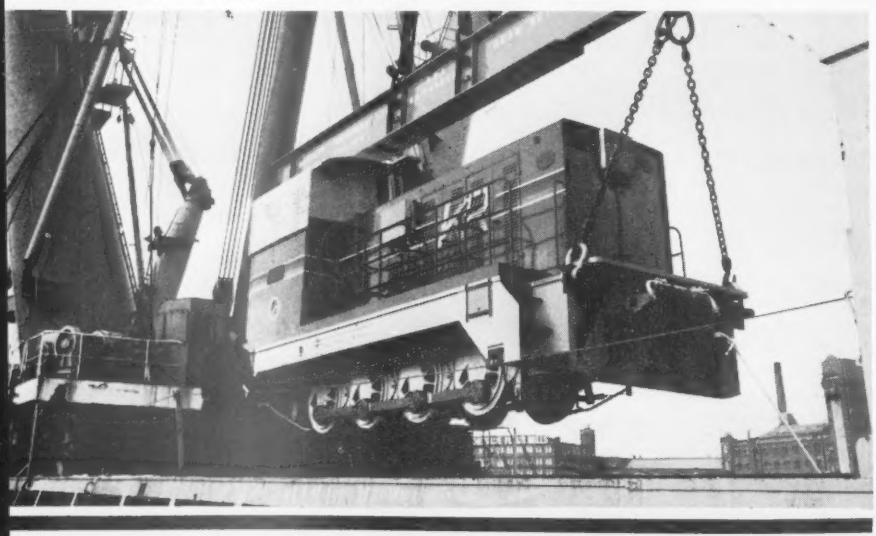
As a result British companies such as GEC Transportation Projects and Metro-Cammell are now working on large mutli-discipline projects in Taiwan, Brazil and Hong Kong which bring valuable business to a wider cross-section of firms in the British railway industry. British Rail Engineering, for example, are building electric multiple unit trains for Taiwan.

And there are many important projects, particularly in the third world, which are being followed through by other companies supported by Transmark and other consultants, banks and government services.

As an acknowledged leader in railway technology, Britain must demonstrate her achievements to the world, both in technology and in the day to day operation of a railway.

BR is poised to move forward to further important and extensive electrification. The Research and Development Division is working on a wide range of technological improvements, all of which will bring advances which can benefit other railway systems. It is a tradition that Britain shares her expertise willingly, and nowhere is this truer than in railways. We built many of the leading railway systems of the world and we still have the capability and desire to be of assistance in their expansion and modernisation.

A Kenyan Railways 0-8-0 shunting locomotive, built at Swindon works by British Rail Engineering, is loaded on board ship at Birkenhead docks.



The export arm of the British Railways Board

British Rail has three subsidiaries to enable it to exploit export opportunities. **British Rail Engineering Ltd (Brel)** is a wholly-owned subsidiary with 13 workshops and a workforce of 35,000 capable of building almost all types of rolling stock and of undertaking many kinds of general engineering work.

Transportation Systems and Market Research (Transmark) is a wholly-owned but professionally independent consultancy subsidiary, competent in every aspect of surface transportation. It has a small professional staff and calls on BR for additional specialist expertise.

BRE-Metro Ltd is a subsidiary jointly owned by British Rail Engineering Ltd and Metro Cammell Ltd, the private sector manufacturer of rail passenger rolling stock, for both of which it handles export business. The company has a small staff who are well-versed in salesmanship and export techniques.

In addition, BR is a member of the **British Railway Industry Export Group (Briex),** which was formed in 1976 from all sectors of the industry to provide a co-ordinated approach to major projects overseas. Peter Parker, chairman of British Rail, is also the group's chairman. Its council consists of representatives of the British Railways Board, London Transport Executive, Department of Trade, Balfour Beatty Power Construction Ltd, Transmark, BRE-Metro Ltd, British Rail Engineering Ltd, Brush Electrical Machines Ltd, GEC Transportation Projects Ltd, GEC Traction Ltd, Metro-Cammell Ltd, Stone-Platt Crawley Ltd, Westinghouse Brake and Signal Co Ltd, and the Railway Industry Association of Great Britain.

A brochure in six languages outlining Briex resources and capabilities is available direct from Briex at BR HQ, 222 Marylebone Road, London NE1.

Speed sells

Despite rationalisation in recent years, Britain still has one of the most densely trafficked railway systems in the world. Yet, as Alan Williams explains, despite its complexity British Rail leads the field in the exploitation of new technology and high speed to improve its train services.

A High Speed Train reaches 125 mph.

Almost anyone could break the world rail speed record, given a quiet stretch of track, suitable equipment and enough time. But doing it all day and everyday on the world's busiest rail system is a little harder. Yet this in essence is what BR, alone among the railways of the world, has chosen to do, with the result that the country's main centres are already served by a pattern of frequent high-speed services which are second to none, running at higher average speeds than the maximum of even the crack expresses in many other countries.

In the early 1960s, when railway engineers in Europe and Japan began to look at speeds of 160 km/h (100 mph) and above for regular operations many opted to build either entirely new railways, like the 210 km/h (130 mph) Shinkansen 'bullet' trains in Japan or the new Paris-Lyon Sudest line, with its proposed maximum line speed of 260 km/h (162.5 mph), while elsewhere in Europe development was centred around the Trans-Europe Express (TEE) network of limited often first class only trains on which special supplements were payable. In contrast, when developing its Inter-City rail network, British Rail rejected the principle of building new ultra-high-speed prestige lines on a few selected routes in favour of general development of trains and track so as to provide significant improvements in speed and comfort for all passengers on its main services. This policy has been reflected in every major British Rail service development since the electrification of the west coast main line from London to Birmingham, Manchester and Liverpool in 1966 – and later extended to Carlisle and Glasgow – brought a basic hourly electric 160 km/h (100 mph) service between all the major centres. Market research has shown that passengers are particularly attracted by modern, frequent and reliable trains, but that the most significant factor is speed and the shorter journey times it brings. On the electric services from London to Manchester and Liverpool introduced in the mid-1960s, rail won back significant traffic from the airlines covering these routes, as well as considerably increasing its share of optional traffic.

Inevitably, such a bold, wide-ranging plan presented railway engineers with formidable problems, calling as it does for huge engineering works and even the virtual rebuilding of the railway system on routes being electrified while it carried traffic, and the development of trains which were in every way compatible with existing track, signalling and operating methods. So, along with the electrification of one of its principal rail arteries, BR began the development of not one but two entirely new types of train – the High Speed Train (HST) and the Advanced Passenger Train (APT).

The High Speed Train

The 200 km/h (125 mph) High Speed Train, first introduced on the London-Bristol and South Wales routes in 1976 and now also in service on the east coast route between London and the north east to Leeds, York, and Newcastle (and later through to Edinburgh and Aberdeen when the route is re-opened following the collapse of a tunnel near Berwick) represents the very best of conventional train technology. Development began in the early 1970s when to meet the exacting demands of future sustained high-speed running, Paxman Valenta 2250 hp diesel engines with Brush electrical equipment were chosen for the prototype High Speed Train, with two engines for each trainset. Both to reduce weight and the wear and tear on track, the engines are located in separate driving/power cars at each end of the train with through cables permitting control of both power units from the leading cab.

The passenger accommodation on HST is in the latest BR mark 3 coaches, fully air-conditioned and insulated, and specifically designed to operate at sustained speeds of 200 km/h (125 mph) with high annual mileage and minimal maintenance.

Probably the most advanced rail passenger vehicle in use today, the mark 3 coach has a stressed skin structure of integral all-welded mild steel construction and was designed with the aid of computer-based finite element analysis techniques to give strength and stiffness over an expected 30-year plus lifespan at minimum weight and first cost. The modular body shell can be used for either first or second-class seat layout and, like most modern aircraft, can be converted internally if required to meet changing business requirements. Interior furnishings employ coloured glass-reinforced polyester panels for cleanliness and ease of maintenance, and the toilet compartment is formed from just three pre-formed sections which are assembled in position as a module.

Advances in constructional and furnishing techniques have enabled the weight of HST with seven passenger coaches to be reduced to 383 tons, compared with 466 tons for orthodox 160 km/h (100 mph) trains of equivalent capacity. The reduction in overall weight, combined with its streamlined front end and fairings, gives HST impressive acceleration, reaching 160 km/h (100 mph) in little over three minutes, and attaining full 200 km/h (125 mph) service speed in under seven minutes. Resistance at 160 km/h is reckoned to be only 75 per cent of that of an ordinary train.

Sixty High Speed Trains are already in use on British Rail, providing blanket 200 km/h services on the London-Bristol/south Wales route as well as hourly expresses from London to Yorkshire and the north east.

Over 30 further sets are now on order from British Rail Engineering Ltd plants at Crewe and Derby, and BR hopes shortly to place orders for 20 more units.

The Advanced Passenger Train

But if the High Speed Train is so successful, why the need for an Advanced Passenger Train? APT is BRs answer to the ultra-high-speed trains currently being developed elsewhere, and unlike the High Speed Train, which is essentially a development of the orthodox train, it is a totally new concept, involving tilting coaches and construction tech-

niques derived from aerospace rather than railway applications. APT has a designed maximum speed of 250 km/h (155 mph), but its greatest asset is its ability to traverse curves at up to 40 per cent higher speeds than orthodox trains. Also whereas HST has successfully exploited the relatively straight and flat south Wales and east-coast routes, where track improvements and realignment at key points has been sufficient to allow HST to run at a sustained 200 km/h, APT is intended to improve speeds on the 50 per cent of BR lines which abound in sharp curves and which it would be economically or physically impossible to improve substantially. Passenger comfort is maintained round curves by automatically tilting the coach bodies inwards by up to nine degrees.

APT is probably the largest single step in improved performance yet attempted by any railway organisation, although the project originated in 1967 almost as a by-product of fundamental research into the dynamic behaviour of railway vehicles at BRs Derby Research Centre. Much of the work centred on the behaviour of railway wheels and bogies when cornering, since curves are the major bar to really high-speed running on any orthodox railway. The research led eventually to the development of an entirely new bogie, of unique geometric design which, unlike existing equipment, has a self-steering characteristic which automatically positions the axles in relation to the radius of any curve, so eliminating the disturbing 'hunting' that is often endemic in unguided bogies at high speed.

But with the success of the bogie design came a fresh problem – how to overcome the greater side forces on passengers resulting from the higher cornering speeds. This was resolved by incorporating a mechanism beneath each passenger car which automatically tilts the vehicle by up to nine degrees as it rounds a curve, thus balancing the centrifugal force in much the same way as an aircraft turning. Each vehicle is tilted individually by hydraulic jacks mounted within the bodies and controlled by an accelerometer. It should perhaps be emphasised that the tilting mechanism, which automatically reverts to the upright position in the event of failure, is provided entirely for the comfort of passengers, and in no way contributes to the high-speed cornering abilities or basic safety of the train.

Second class 72-seat passenger coach of the Advanced Passenger Train.

The first experimental train, APT-E, was built in the early 1970s to put the Derby theories to test and in 1975 attained a maximum speed in 244 km/h (152 mph). However, it was powered by gas turbines, which experience has shown to be costly in both equipment and fuel terms, and the three pre-production prototypes trains now under construction are electrically powered and intended specifically for use on Anglo-Scottish services over BRs 25 kV electrified west-coast main line. From May 1980, BR hope to slash the present five hours timing for the 640 km (400 mile) dash from London to Glasgow to just 4 hours 10 minutes. British Rail is confident that the new trains will prove as popular as the HST, and hopes to have a fleet of APTs covering all its major London-Manchester, Liverpool and Glasgow services by the mid-1980s. BR is also looking at a diesel-powered version of APT, the attraction of which would be not so much its maximum speed as its ability to lop minutes off schedules by simply running over winding routes at higher speeds. But as BRs passenger marketing men readily agree, APT and HST are complimentary rather than competitive, and when it comes to diesel traction, the borderline between the orthodox HST and a new version of the APT is distinctly blurred.

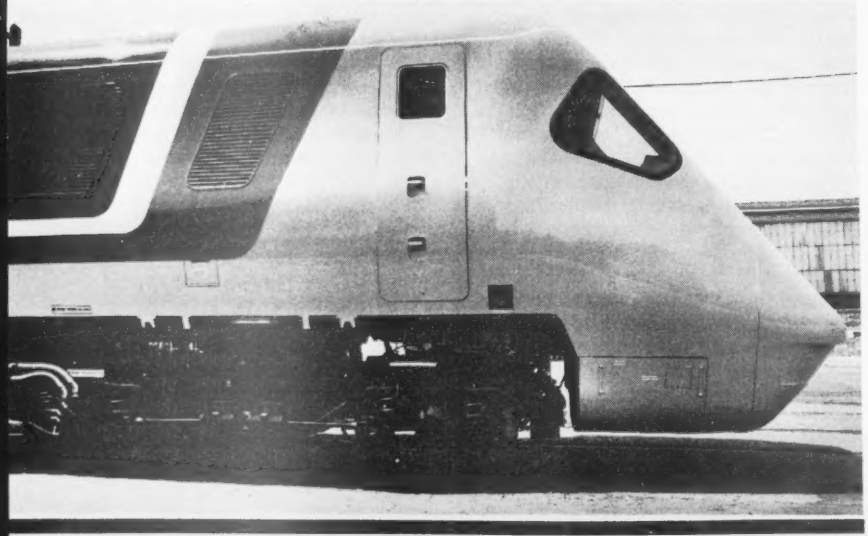
The electric pre-production trains – codenamed APT-P – have lightweight steel semi-monocoque power cars mounted on two four-wheel bogies with thyristor electrical control equipment for their four 750 kW traction motors which, unlike conventional trains, are mounted within the body and drive the axles via a gearbox and cardan shaft. Each power car is equipped with anti-tilt mechanisms to ensure that the pantograph remains in contact with the overhead electric wire as the body tilts.

The passenger-carrying trailer vehicles of APT represent a complete departure from general railway practice in that they are both articulated to the adjacent vehicle and constructed almost entirely of aluminium alloy, giving a 40 per cent weight saving over conventional steel coaches. The vehicle structures are designed to withstand 200 tonne-plus buffing loads, but the dominant design criterion is stiffness rather than strength, because high flexural natural frequencies are essential for good riding qualities at high speed. Substantial weight savings have also been achieved by developing a sealed system chemical toilet, light weight seats and a low-energy air conditioning system, the intakes and exhausts of which are automatically sealed on entry to tunnels to protect passengers from transient pressures.

Because APT, like HST, will have to share tracks with orthodox, slower moving trains, the braking system had to be designed to stop the train from maximum speed within existing signalling distances and to meet this arduous specification, BR has developed the hydrokinetic (water turbine) brake as the only type capable of dealing with the very high levels of energy and power dissipation involved.

With 200 km/h (125 mph) high-speed diesel trains now an everyday sight on Britain's railways, and the revolutionary electric Advanced Passenger Train about to be introduced into public service, British Rail are now at something of an investment crossroads. With both diesel and electric high-speed trains of very different characteristics now in its stable, BR means to keep its place at the top of the high speed table. But the eventual mix of diesel and electric traction will inevitably depend very largely on government reaction to BR's plans for a rolling electrification programme.

Aerodynamic lines of the Advanced Passenger Train driving cab.



An electrifying moment?

As world oil prices rise and shortages develop, Roger Ford, technical editor of Modern Railways, argues the case for more railway electrification in Britain.

There have been a number of studies of railway electrification in Britain, dating back to the 1930s. But the latest, initiated in May 1978 by the Secretary of State for Transport, is likely to be the most wide-ranging, extending its review of the case for a programme of main line electrification in Great Britain to include such matters as noise, pollution, safety and energy supplies in the future. The review is being carried out under the direction of a joint Department of Transport/British Rail Steering Group. One of the first actions of the Steering Group was to call for the views of the railway industry and other interested parties. These submissions have argued that the case for electrification is, in fact, a series of inter-related cases with wider implications than the direct benefit to British Rail and its customers.

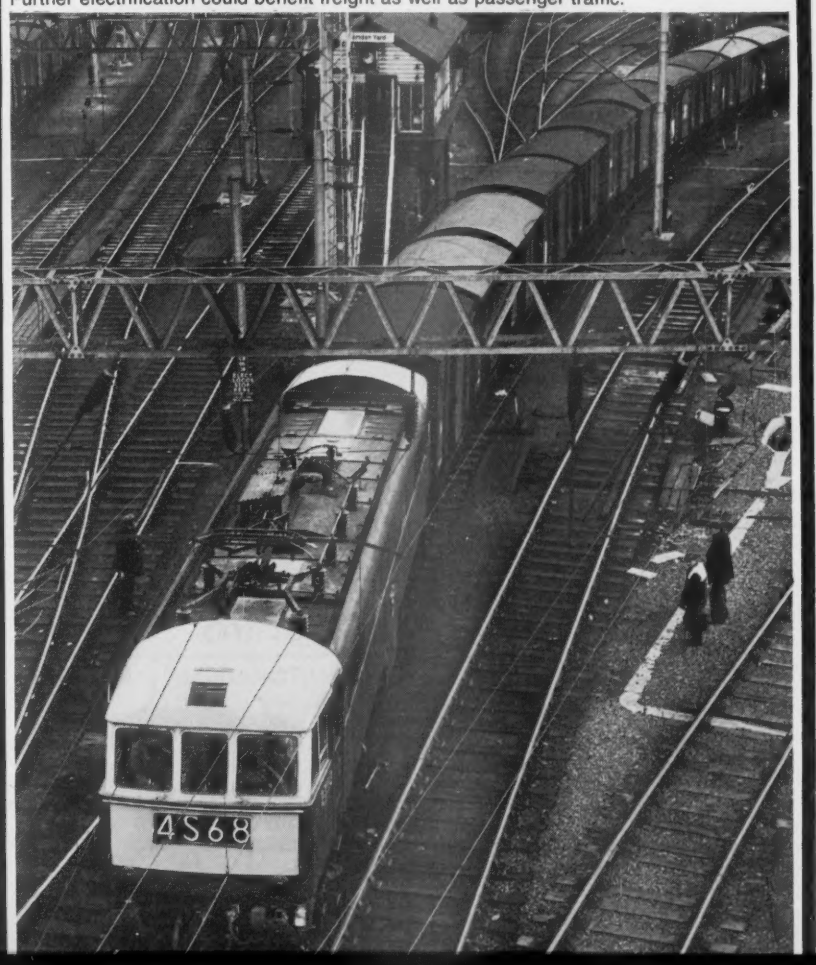
The basic case for electrification is that it results in a better railway. World-wide experience shows that electric traction equipment is simpler, lighter, cheaper and longer lasting than the diesel equivalent. Continuing technical development, particularly in semiconductor technology, is extending this advantage. To this is added significantly better reliability and lower operating costs. According to British Rail, failures in electric traction equipment occur only a third as often as with diesel and operating costs, including fuel, maintenance and capital charges, are only 70 per cent of the diesel powered equivalent. This reflects the higher availability of electric traction, with less time spent out of service because of lower maintenance requirements plus the fact that the electric equipment does not need refuelling.

To the customer, the electric railway is able to offer faster and more frequent services because of the better marginal costs of electric equipment. It costs less to build-in additional capacity for the power equipment in electric locomotives and trains to provide higher performance and, once the electrified service is running, the better availability allows more intensive services to be run for any given marginal cost. Thus on the latest suburban electrification scheme, from Kings Cross to Welwyn Garden City and Royston, frequent trains are run throughout the day and have proved successful in attracting the off-peak passengers who can make an important contribution to the overall success of such a scheme. Such is the effect of familiarity that discussion of electrification invariably centres on the post-war schemes such as the West coast main line route from London to Glasgow or the more recent suburban schemes. Yet, two of the best demonstrations of the benefits of electric traction date back to the early years of this century. The Southern Region of British Rail and the London Underground have been electrically powered so long that it is unremarked. Every day these two systems handle over 700 000 passengers in the peak hours and the reliability and performance of even the oldest stock in service, now some 40 years old, is high by any standards and contrasts strongly to that of the lightweight bus-engined diesel multiple-units half that age.

This is the operating case for railway electrification. Because it is essentially based on passenger traffic it can be expressed in terms of cases for individual routes to be electrified. British Rail's present long term investment forecast includes a number of electrification schemes where they think a financial case can be supported These include extensions of existing electrification, such as Colchester to Norwich and Harwich and Preston to Blackpool, and intensively-used lines such as Glasgow-Edinburgh. Beyond these, the next stage would be the electrification of major Inter-City routes. Here, under present accounting rules, British Rail consider that only a marginal case can be made on financial grounds for the electrification of such successful routes as the east coast main line between London and Newcastle. Introducing a common approach in the assessment of all transport investment may well swing the balance in favour of electrification on the busier routes but it would still leave electrification policy based on passenger traffic. The reason for this is that much freight traffic does not follow the main radial passenger routes from London. Thus, electrification of the east coast route would not greatly benefit freight traffic on east to west routes – indeed, it might even have a negative effect. The Manchester-Sheffield cross-Pennine electrification illustrates this dilemma. This line was electrified as a heavy freight route but today, trains using it arrive at each end under diesel power. Changing between diesel and electric traction at each end imposes a severe operating penalty for modern freight trains which run to tight schedules and at high speeds. End to end timings might even be faster without the change to the more efficient form of transport over the Pennines. The converse is also true. If the policy was to electrify a network rather than individual routes, then through electric traction for freight would become increasingly possible and the overall benefit – in operating and financial terms – would exceed the sum of the benefits of the individual schemes which the network covered. At the same time, the cost of electrification would be less. A British Rail study has shown that the network approach would require the electrification of only 70 per cent of the track miles that a non-continuous route-by-route programme would involve. This is what British Rail, in its discussion paper on electrification, calls 'synergy'.

There are two further cases which bring in

Further electrification could benefit freight as well as passenger traffic.



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the energy and industrial aspects of the subject. With the rising costs of oil and forecasts of an eventual 'energy crisis,' national transport policy and energy are inseparable. Already, rising fuel prices are part of the cost equation which is resulting in the more progressive road hauliers using rail for their long distance trunk hauls. This is, in fact, the first stages of an oil-substitution strategy. Even though much of this new rail freight is diesel hauled, the inherent energy efficiency of the steel wheel on steel rail means that the most efficient place to burn oil for transport is in the engine of a diesel locomotive. But with British Rail using only 800 000 tonnes of fuel oil out of a national consumption for transport of 24 million tonnes direct oil savings from electrification will be small and take a long time to achieve. What network electrification will do is enable the railways to handle an increasing amount of traffic – both freight and passenger – as fuel costs and ultimately oil shortages affect road transport. At the same time, the railway will be able to run on electricity generated by whatever form of energy is available. The energy case is a long term one and hard to quantify. Taking the two options of the status quo and extensive electrification and the two possibilities of energy availability continuing much the same and some form of energy crisis the arguments run as follows. If the energy supply does not change appreciably, the present mix of diesel and electric traction will suffice. In the same situation, investment in an electrified railway will have produced a more efficient transport system. If, on the other hand, energy does become a problem, then the existing railway might, at best, be handicapped in meeting new opportunities and at worst it could be inadequate to meet national transport demands. The electrified network would be able to become what British Rail terms 'The backbone of Britain' It is significant that the government's announcement of the setting up of the review referred specifically to seeking the views of the railway industry. It was to be expected that the industry would come out firmly in favour of a rolling programme of network electrification which would provide a substantial workload for its design teams and factories over 15-20 years. But the main thrust of its submission to the Steering Group concerned the effect a rolling programme at home would have on the industry's ability to compete for electrification work overseas.

The rapid modernisation of British Rail under the 1955 plan meant that the railway acquired all the new motive power it needed in a very short burst instead of spreading the purchases over a long time. As a result, the market for new locomotives virtually disappeared overnight in Britain and has only lately returned with the rolling programme of 25 diesel freight locomotives a year. Even this is less than a quarter of the annual output of individual factories during the modernisation programme. The problem of rapid acquisition is that replacement becomes equally concentrated. A rolling programme of electrification alleviates two aspects of this problem. First, it will establish the numbers of locomotives to be built on which investment in new or expanded manufacturing facilities can be justified. Second, it enables a long term programme to be established under which the older diesel locomotives can be replaced as the more modern units are released by electrification.

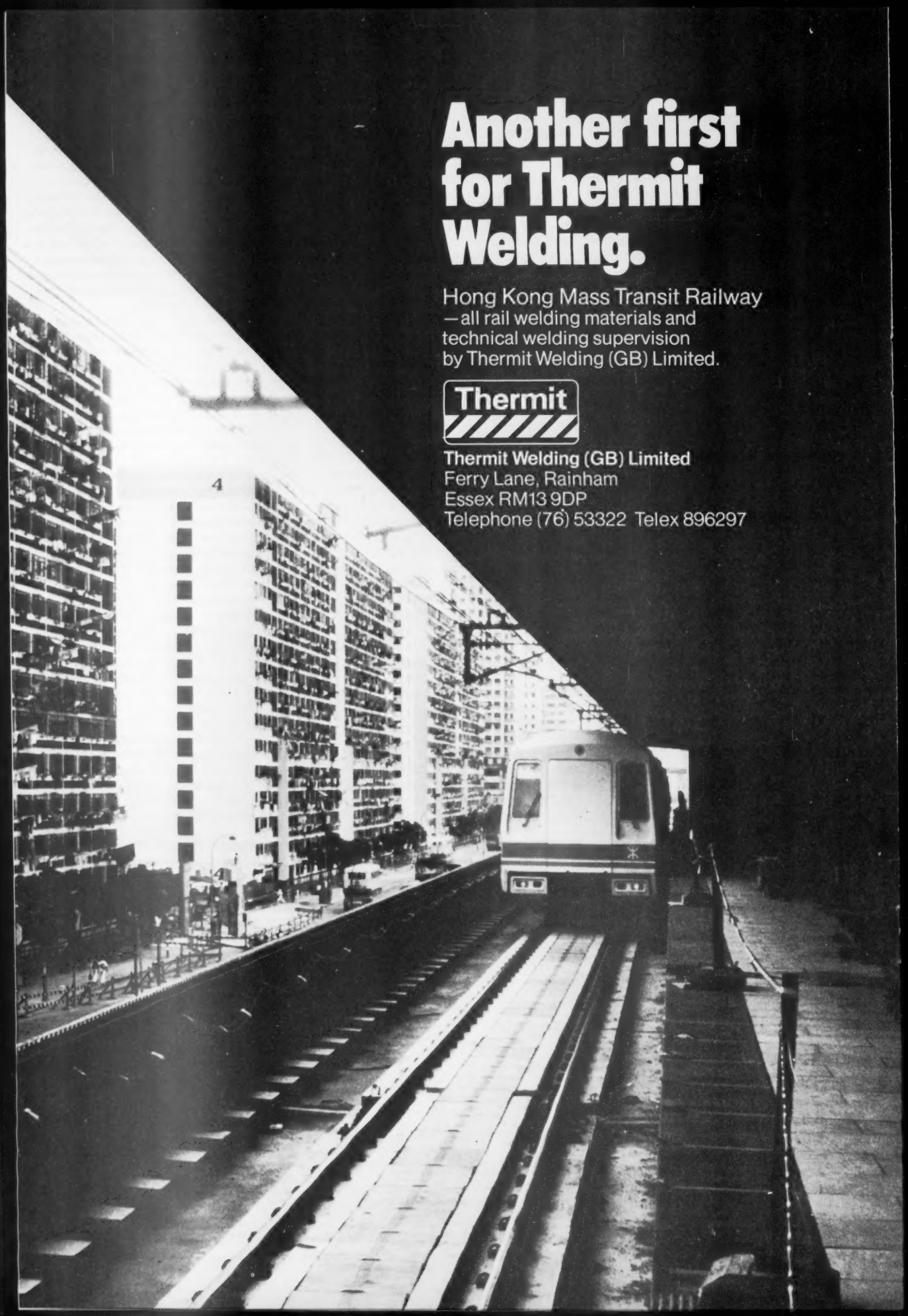
Similar considerations apply to the manufacture and installation of the electrification equipment itself, the overhead line and the supporting masts. The erection of this equipment, in particular, depends on the skill and experience of relatively small teams of men. Since the West Coast main line electrification was completed in 1974, these teams have been kept in being working on a mixture of small suburban schemes at home plus export projects such as the recently completed Taiwan electrification. Large export projects do not come at intervals to suit the manufacturer and the home market is thus very important in keeping a basic flow of work for the project teams. A rolling electrification programme would not only provide this base-load of work, it would also expand the nucleus of experienced staff around whom new project teams could be established rapidly to meet the needs of export customers.

Export potential is, of course, a customary argument for industries seeking government investment. In support of its case the railway industry can quote some solid facts behind its belief in the importance of the home market to export sales. Take trains and wagons for example. Metro-Cammell of Birmingham has a base-load of work building new Underground trains for London Transport. In the last three years it has sold trains to Hong Kong worth over £200 million. British Rail Engineering Ltd's spectacular rise as an exporter of railway wagons to Africa has been against the background of substantial rolling programmes for freight vehicles for British Rail.

It is no use having the capacity to manufacture if the product is out of date. British Rail is one of the finest shop windows for railway technology in the world – as the unending procession of railwaymen from other countries visiting Britain testifies. In passenger trains, signalling, track and many other aspects it is a thoroughly up-to-date shop window. But in electrification, and electric locomotives in particular, it is becoming a little long in the tooth. For example, British Rail ordered its last electric locomotives eight years ago. Since then, there has been a revolution in the application of semiconductor power devices, such as the thyristor, which has transformed locomotive design. Where British industry has had a single prototype thyristor locomotive on its home railway, one competitor in Sweden has been able to base its export activities on a fleet of 265 for its home market. That Britain is successfully exporting thyristor locomotives and trains says much for the industry's technical abilities and reputation, but it is still a breach of the unwritten rule of railway exporting – namely that you prove new equipment at home before you put it to work on an overseas customer's railway.

Thus the industry's case for a rolling programme of electrification in the United Kingdom is that it would accelerate the development of new products, provide a shop window for these products to potential export customers and provide the base load on which manufacturing facilities could be expanded so providing more competitive prices (at home and overseas) and shorter deliveries. The result would be an even greater volume of railway exports with a high value-added technological content. In a volatile export market, it is impossible to say that the industrial benefits of railway electrification would lead to specific contracts being won. But there are precedents which establish a firm link between home and overseas business. The 1966 Euston-Liverpool/Manchester electrification led to the similar project in Pakistan in 1966 and the Taiwan modernisation and electrification scheme followed on from the completion of the West Coast main line electrification through to Glasgow. On a smaller scale, Britain's background of third rail direct current electric railways has been an important factor in the ability of Britain to sell power supply equipment to mass transit systems in the highly-competitive North American market. Nor is it coincidence that signalling and trackwork – two sectors of the railway industry with a notably good export record – have had a sustained home market for many years.

Sleek lines of the Advanced Passenger Train.



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Rapid revival

The last decade has seen a considerable revival of interest in urban rail systems in Britain. Alan Williams contrasts the scene today with the retrenchment of the 'sixties.'

Just fifteen years ago, with an air of complacency about future fuel supplies that seems incredible today, Britain was busily rationalising its rail network, closing unremunerative inner suburban lines in Birmingham, Liverpool and Glasgow, and de-electrifying and reducing services on the once busy Tyneside suburban system. Today in every one of these cities lines are either already back in business, or being prepared for re-opening in the near future.

On Merseyside the new Loop and Link underground lines under the city are complete, and the surface lines to Garston and Kirkby have been electrified and reopened with such success that the trains are now overloaded at peak hours and platforms are having to be lengthened for longer trains.

On Clydeside, the Argyle line electrification linking the existing North and South side electric services beneath Glasgow is virtually complete and is expected to be open later this year. On both these systems, British Rail is providing the rolling stock, which is based on the successful Class 313 units first introduced on the Kings Cross suburban lines. In Glasgow too, the underground system is being completely refurbished and provided with new trains built by Metro-Cammell. But perhaps the most interesting and comprehensive development is that on Tyneside, where the first section of the new light rapid transit Metro is due to open at the end of this year.

Employing two car articulated 'Supertrams' rather than conventional trains, the system aims to connect the old North and South Tyneside rail systems, together with a new line to Kenton, by new tunnels under Central Newcastle and Gateshead linked by an impressive new bridge across the Tyne. Both the two prototype 'trains' introduced in 1975 and the production batch of 88 cars now being delivered were designed and built by Metro-Cammell. There are seats for 84 passengers in each articulated two-car set, although well over 200 people can be carried under crush load conditions. Eventually, when the system is complete in 1982, the Metro authorities reckon to run up to three sets in multiple at peak periods, and both the new underground stations and the surface level halts have been designed to take up to six coaches. The cars, which work off a 1500V overhead supply, will be one man operated, and many of the smaller stations will be unstaffed, with considerable reliance on two way radio and closed circuit television for both passenger control and security purposes.

Closed circuit television, incidentally, has proved to be the answer to both the staff shortage and vandalism problems on other systems, too; on Merseyside, where all the platforms, booking areas and access tunnels are continously monitored and the controller can address each area individually on the public address system, vandalism, previously a considerable problem, has been virtually eliminated despite the absence of staff from platforms, while the system has proved an excellent aid to crowd control at peak times or in the event of an accident.

In London, too, the pace of improvement is quickening, with the completion of the Great Northern suburban electrification from King's Cross, the commencement of electrification work on the suburban lines north from St. Pancras, and the opening last month of the first section of the new Jubliee Line, London's second new tube line in a decade after an interval of almost 60 years. Eric Ellen, chief secretary at London Transport and former chief transport planning officer, has no doubt that the future is electric, with an increasingly important role for the Underground, which already subsidises bus operating costs although he stresses that buses will continue to be essential both to feed rail and to provide for many journeys in Greater London which cannot be made conveniently by rail.

Ellen sees the renewed importance of rail both as a natural consequence of increasing congestion in London and because electric trains are intrinsically more efficient users of energy than cars and, unlike cars and buses, will be able to run in the future on electricity generated without the use of oil. He is bullish about the eastward projections of the Jubilee Line, to Docklands and Thamesmead, and is ready to go with stage II, east as far as Fenchurch Street, just as soon as he gets approval. He is at pains to point out that, although new tube lines sound expensive. London Transport already spends virtually the equivalent amount of the total cost of stage I of the Jubilee Line each year on its programme of improvement and replacement of existing Underground and bus facilities. This latter programme is of high priority, but naturally LT are keen to press ahead with further new projects.

The Piccadilly line extension into Heathrow airport is an unusual exception among new Underground railway projects in that it is apparently already profitable, in the sense that the additional revenue earned is more than enough to cover the extra operating expenses and to pay back, over a reasonable number of years, with interest, the 50 per cent of the capital cost not provided by the GLC and the government. Along with British Rail, London Transport are talking to the

One-man-operated Supertrams – the Tyneside Metro. Over 200 people can squeeze into each articulated two-car set.

British Airports Authority about possible rail connections to the proposed Heathrow Terminal 4.

There are also tentative long term plans for London's next tube line – after the Jubilee Line extension into Docklands – the so-called Chelsea-Hackney line, which would provide a new south west-north east line serving Fulham, Chelsea, Victoria, Waterloo and Holborn before turning east to Old Street, Dalston, Hackney and beyond. The new line would take over one branch of the Central Line beyond Leytonstone and would relieve overcrowding on the Central Line through the City into east London.

Ellen admits that the cost of new projects is now daunting, and does not dismiss the possibility of using lighter rapid transit techniques than have previously been the case in London. Stations in particular are expensive nowadays, and within a rapid transit research and development programme supported financially by the Department of Transport LT are looking at possible 'minitube' techniques which might reduce costs and facilitate simpler station designs, wherever possible on or near the surface.

Along with Paris, New York and Moscow, London boasts one of the finest Underground railway systems in the world, and LT clearly propose to keep it that way. Nevertheless, they are happy to sell know-how to the increasing number of countries wanting advice on rapid transit systems and technology, and in 1976 LT set up a wholly owned subsidiary, London Transport International Services Ltd, as a Public Transport consultancy. It has already won contracts for a wide range of work in the United States, South America and the Far East, as well as advising both the Glasgow Underground and Tyneside Metro authorities.

Managing director Arthur Knight is currently working with American consultants on the New York subway system, and undertaking studies on track design for the US Department of Transportation. He reckons that any city of over a million inhabitants might be in the market for some form of rapid transit system and sees the problems of the San Francisco BART (Bay Area Rapid Transit) system as a tragedy, warning that the same fate could befall any authority attempting to introduce a new transit system with inadequate operational know-how or advice. He is fairly enthusiastic, though, about the chances of some of the current transit system proposals in both the United States and elsewhere coming to fruition as the world oil shortage develops.

Want to buy a railway?

Britain's railway industry is small alongside some of the world's giant engineering groups, but, as Ann Edge discovers, it is uniquely able to supply anything from a humble track fastening to the latest trains and electronic signalling systems.

Should you ever be in the admittedly unlikely position of wanting to buy a complete railway system, you can take heart in the fact that every bit of it could be made in Britain. Numerically, the British railway industry may not be large compared to, say, the giant aerospace industries of the world, but it is one of the few still able to provide everything that the world's railways need, from track fastenings to the latest diesel and electric locomotives or electronic signalling wizardry.

Naturally, exporting dominates the activities of much of the industry, from the giant GEC group to such small specialist companies as Wickhams. Indeed, GEC has its own wholly-owned subsidiary, GEC Transportation Projects Ltd, to co-ordinate the specialist companies dealing with traction, signals, telecommunications, switchgear and other related disciplines, for the purposes of providing a comprehensive service to overseas customers. This service includes investigations, surveys and studies of potential main line, suburban or rapid transit systems, commissioning new equipment, training customers' operating and maintenance staff, and a comprehensive after sales service.

GEC TPL sees itself as essentially project managers and contractors for customers, mainly from the emerging third world, who do not have the existing engineering structure within their own railway systems to specify and order equipment direct from the wide range of individual manufacturers.

GEC TPL was set up in 1972 and its first contract was for the electrification at 25 kV of the 400 km Keelung-Kaohsiung main line in Taiwan, the final section of which is to be commissioned in the next few days, two months ahead of schedule. GEC TPL works closely with other parts of British industry, including the British Insulated Callenders' Cables Ltd group, on electrification projects, so that they are able to offer a complete electrification package including associated signalling and telecommunications as well as the overhead catenary, switchgear and power supply equipment. British industry detects a worldwide upsurge in railway development and electrification for both environmental and fuel cost reasons and, with BICC, GEC TPL is well placed to provide the expertise, based on considerable experience at home, of overhead high voltage ac electrification. Already, GEC TPL is working on a Brazilian Federal Railway (RFFSA) contract for the electrification of over 400 km of line, and on proposals for systems in Mexico, China and a number of other countries.

BICC itself has an impressive record in railway electrification. Its main subsidiary in this field, Balfour Beatty Power Construction Ltd, has over 60 years experience of the supply and installation of overhead equipment for both high voltage ac and medium voltage dc systems. Today it also specialises in design and development, and is working on the prototype of a new overhead catenary for use on high speed lines used by trains travelling at over 200 km (125 mph). This research is aiding studies for the proposed line between Madrid, Barcelona and Port Bou in Spain, and for the modernisation of the US north-east corridor line between Washington, New York and Boston.

Well over half of Balfour Beatty business is in such areas as Taiwan, South Africa and, currently, Hong Kong for the Kowloon-Canton railway, but a strong home-based industry is also seen as important.

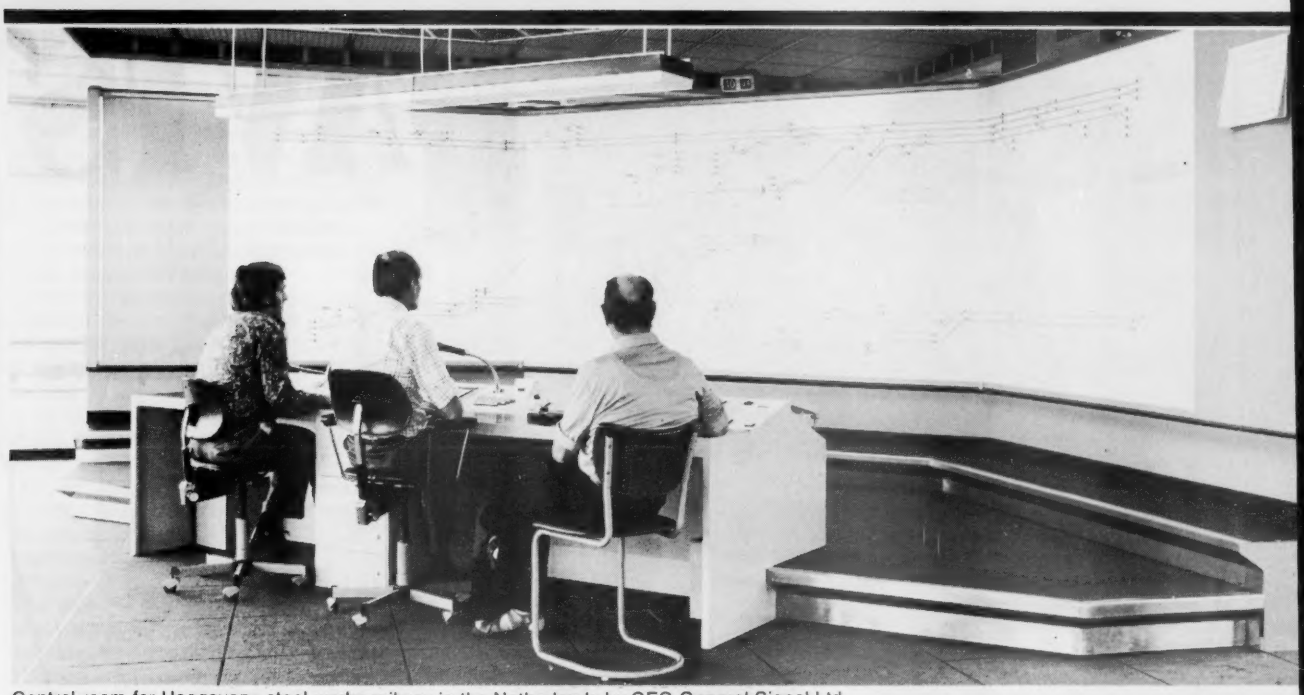
Specialists

But it is not only the large companies who have impressive export records. John Atkinson of D. Wickham and Co, specialist manufacturer of self-propelled vehicles for track and overhead line maintenance and inspection, reckons that no less than 95 per cent of his business is currently for export. 'Our major markets are the tropical African countries, to which we supply equipment for the narrow gauge lines where access by road to the railway is frequently inadequate or non-existent,' he says.

Another company to claim an export output of over 90 per cent is Stone Platt of Crawley, maker of train lighting and air conditioning equipment. Sales manager Mike Lambert sees his company as systems engineers, selling complete packages to customers, either for installation in their own equipment or, as with an order from Hungary, for inclusion in complete vehicles which are themselves being exported to a third country.

Stone Platt is providing all the air-conditioning equipment for the Hong Kong Mass Transit System, in this case provided as a single package which slots into the carriage roof. Mike Lambert sees several advantages in this innovation. First, the equipment is easily accessible and the whole package can be

Prince Charles opens London Transport's new Jubilee line.



Control room for Hoogovens steel works railway in the Netherlands by GEC-General Signal Ltd.

removed for maintenance or replacement quickly and easily; secondly, cold air is introduced to the top of the carriage where it is most effective; and thirdly, and perhaps the most important advantage, by removing the system from the carriage more space is released for passenger use.

All 210 coaches for the present phase of the Hong Kong Mass Transit System are being built by Metro-Cammell Ltd in Birmingham, and earlier this year the Transit Authority placed a further order worth £50 million for another 150 cars for the Tsuen Wan extension which, when opened at the end of 1982, will nearly double the estimated 1 million people per day carrying capacity of the initial system. The Metro-Cammell cars for the Tsuen Wan extension will initially be operated as six-car trains, but as traffic develops, eight-car trains will come into operation, giving each a staggering crush-loaded capacity of no less than 3300 people of whom under 400 will be seated.

Metro-Cammell's order book certainly looks healthy. The company is also building 45 three-car electric multiple-units for the Kowloon-Canton railway, which is being electrified at 25 kV ac, as well as 88 two-car 'Supertrams' for the Tyneside Metro and new underground cars for both London Transport and the refurbished Glasgow system.

Traditionally, Britain has supplied locomotives to the railways of the world almost since railways began. Gerry Fidler of Hunslet Engine reckons his company has been in the export business ever since it exported a locomotive to Java in 1865. But despite its romantic history, The Hunslet Engine Co is thoroughly modern, with both main line and shunting diesel locomotives with electric, hydraulic or mechanical transmission, although they still make spare parts for steam locomotives. Today, more than half the production of the Leeds plant, which also includes specialist underground mines locomotives, goes to export customers.

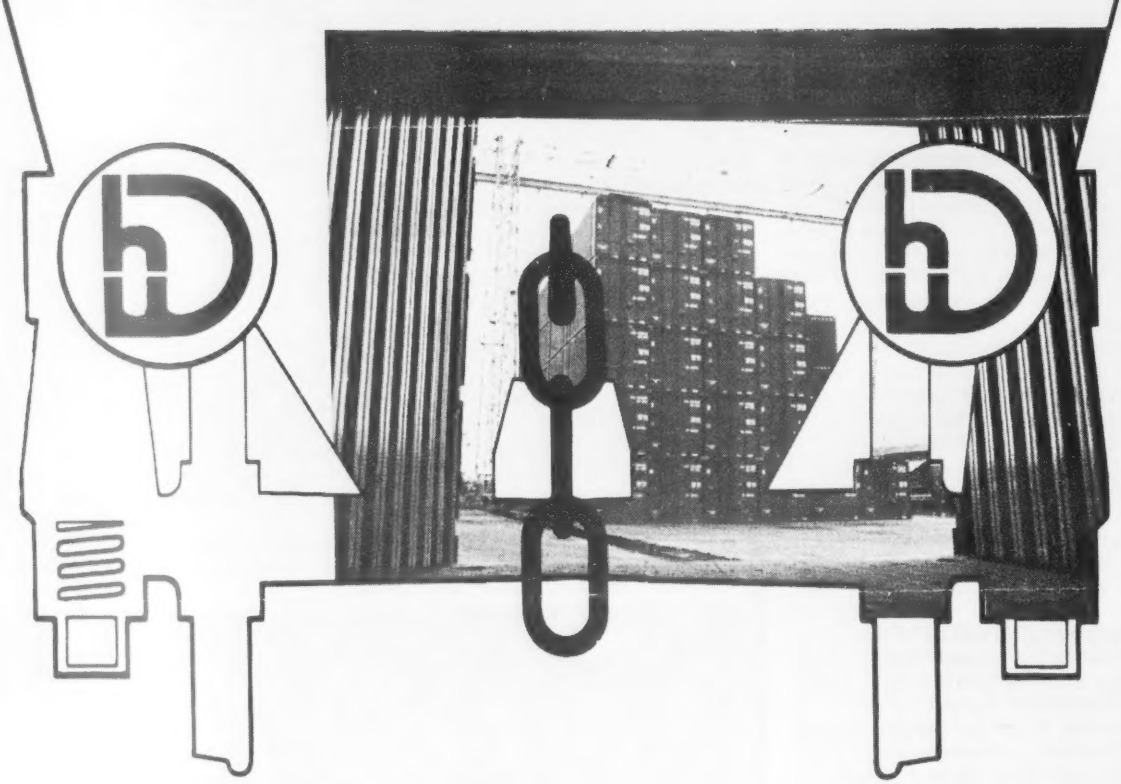
The company manufactures a series of standard locomotives which come with a choice of powerplant and transmission, but Gerry Fidler is keen to emphasise that Hunslet will design and manufacture a locomotive to a customer's particular specification, regardless of the number they might want. 'It takes about 18 months from the date of order to completion for a special', says Fidler, 'but once we have provided a locomotive we undertake to maintain and guarantee the parts for 80 years'.

Many of the specials go to the developing nations of Africa. For example, for 40 years Hunslet has provided Sudan with what they call Plantation locomotives. Specially built to give maximum performance combined with a low axle weight on lightly laid narrow gauge tracks, they also have to be constructed to operate in the very dry, dusty conditions endemic in the area. Hunslet is working on an order for special shunting locomotives for the Kenya Railway in conjunction with British Rail Engineering. But not all its specials go abroad: twelve 1142 hp giants weighing 91 tonnes apiece have recently been designed and built for British Steel's new plant at Scunthorpe.

Other British locomotive manufacturers continue to win orders for specialist equipment. Andrew Barclay in Kilmarnock, now also a member of the Hunslet Group, enjoys a worldwide reputation for its fireless steam locomotives and diesel shunters, while Thomas Hill of Rotherham, now a subsidiary of Rolls-Royce Motors, produces diesel shunting locomotives of all types for specialist applications, and battery-electric flameproof underground personnel carriers for use in mines. Brush Electrical at Loughborough retains its capacity to build main line diesel and electric locomotives, whilst Associated Electrical Industries, British Thomson-Houston, English Electric,

A group of senior Mexican signal engineers who recently visited Britain to discuss possible electrification and resignalling plans with GEC, and are seen examining the GEC installation in BR's new King's Cross power signalbox.

DAVIS



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Signals and brakes

Two companies which have entered the railway industry from other transport sectors are Lucas Girling and ML Engineering. Lucas Girling entered the railway braking field in 1950 and have since concentrated on developing their disc brake technology. Current production includes wheel-mounted disc brakes, transmission brakes, wheel slide protection equipment and axle mounted disc brakes. Still under development are light rail vehicle brakes with trials commencing later this year. At present, major markets outside Britain are mainly in Europe, including Scandinavia, although the company have recently won an order from Australia.

ML Engineering came into railway engineering in 1959 by way of the aircraft industry. Its first railway contract was for the installation of new signalling at Plymouth – where it is now based – and since then the company has expanded its railway signalling business both at home and overseas. An interesting recent export order in Jordan involved the control of signals on the 266 km El Hasa-Aqaba section, a single line railway with passing loops across difficult desert terrain, subject to both washouts and dust storms. The conventional approach would have involved carrying the control cables either on poles alongside the track or underground – both a costly exercise to install and maintain. Instead, ML proposed high-frequency radio control of the fixed signals from the control centre, and won the contract.

Another innovation under development at ML is a traction immune jointless track circuit, suitable for use on both ac and dc electrified systems. Prototypes are under test on both British Rail and South African Railways systems.

A company covering both the brake and signal sectors is the Westinghouse Brake and Signal Co which exports about half its railway sales. Notable recent examples include the signalling, train supervision and automatic train control equipment for the new Hong Kong Mass Transit System which, together with the brake equipment supplied to Metro-Cammell for the system's new cars, represents an export order of some £20 million.

Almost 1000 sets of vacuum brake equipment for freight wagons have recently been supplied to Bangladesh, and recently the company obtained type approval from the Association of American Railroads for its new freight brake control valve, the first time that the AAR has given such approval to a company outside the United States and thus effectively opening up the huge north American freight brake market to Britain.

Export clip

But of all the export success stories of the British railway industry, one of the most outstanding is that of Pandrol. It is no exaggeration to say that the unique Pandrol rail clip has revolutionised the whole system of securing rails to sleepers; it has not only transformed this hitherto labour intensive task into a highly cost-effective process, it has also substantially contributed to the higher safety and reliability of present-day high speed lines. Working closely with British Rail, Pandrol installed its first prototypes in 1960 and in the same year saw an installation commissioned by Nigerian Railways. Now, 20 years and 225 million clips later, Pandrol resilient rail fastenings are in everday use on railways in 47 countries outside Britain, as well as in extensive use on British Rail.

Managing director Brian Clough estimates that of the current annual sales of £20 million, exports account for at least £16 million. And he is looking to increase his overseas business by 50 per cent by 1982.

The size of this achievement – and his aspirations for the future – is perhaps better understood when one realises that Pandrol's engineers often work in co-operation with overseas railway engineers for several years before a contract is secured. Last year, for example, a major fastenings contract for the Brazilian State Railways was secured only after four and a half years of negotiations. Almost every application presents some particular operating difficulty, and it is because both environmental and operating requirements vary, from underground mines and industrial uses to heavy duty crane tracks and high speed passenger lines, that the size and geometry of the clip also varies. Now, over 30 different types are available, and design and development work continues to keep abreast of each new requirement.

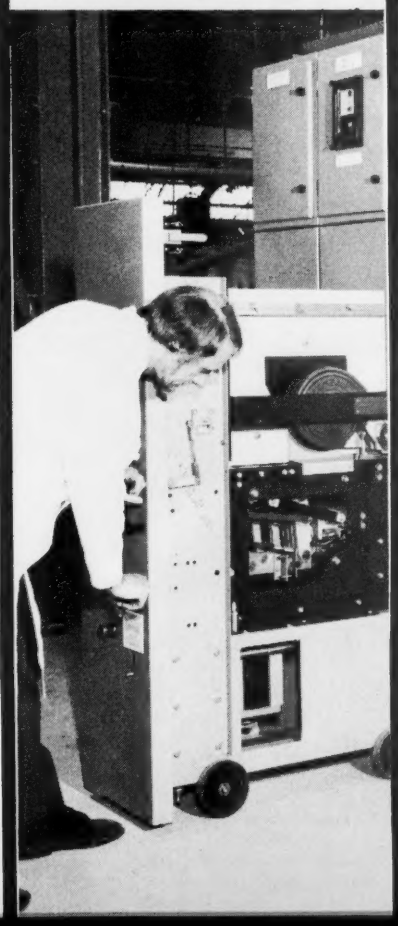
Nationalised industry exports

Britain's nationalised industries make significant contributions to rail exports. British Rail's workshops subsidiary, British Rail Engineering Ltd, sold over 500 wagons overseas in 1978, and won record export orders worth almost £50 million, while Transmark, BR's consultancy subsidiary, is working on over 70 different contracts in nearly 30 countries and won the Queen's award for export achievement in 1978. Transmark's latest contract, with the US Federal Railroad Administration, provides for the setting up of a train planning and control centre for the North-east corridor route and for advice on the development of an American version of a Swedish electric locomotive.

British Steel, too, has a major stake in railway products. Recent investment of over £11 million in new equipment has enabled the corporation both to introduce new designs

Dr Enrique Melrose, director general of planning at the Mexican Ministry of Communications and Transport, tries the driving seat of a High Speed Train. Dr Melrose was heading a delegation of officials from the ministry, which paid a week's visit to Britain as guests of the BOTB.

GEC High Voltage Switchgear Ltd will be supplying all of the 1500 volt dc switchgear controlling the track supplies for the new Hong Kong Mass Transit Railway. This photograph shows one of the switchboards on completion at the company's Trafford Park, Manchester, factory.



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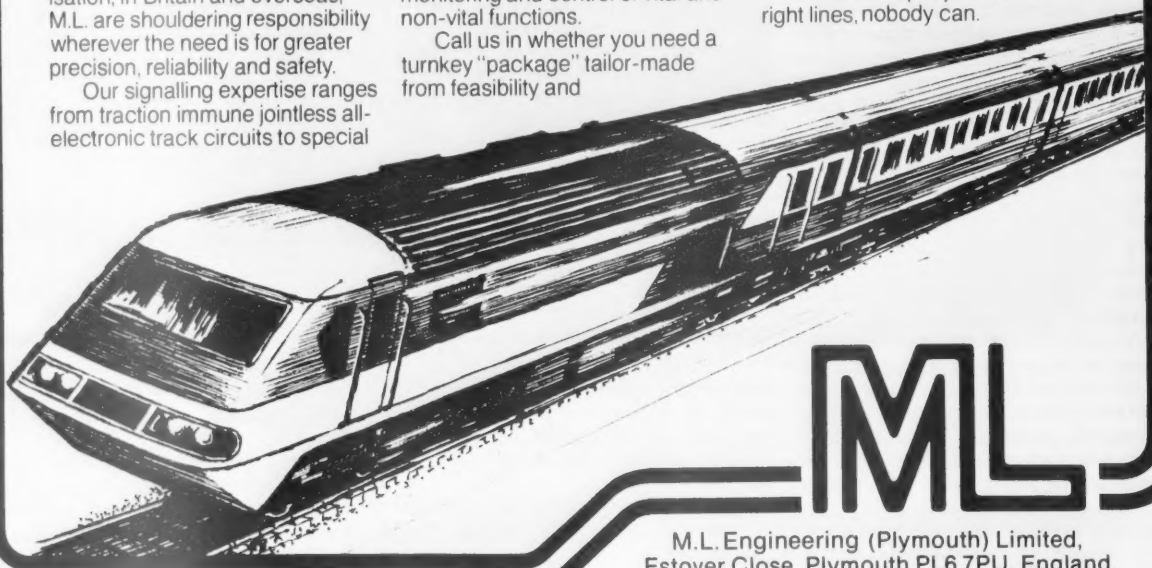

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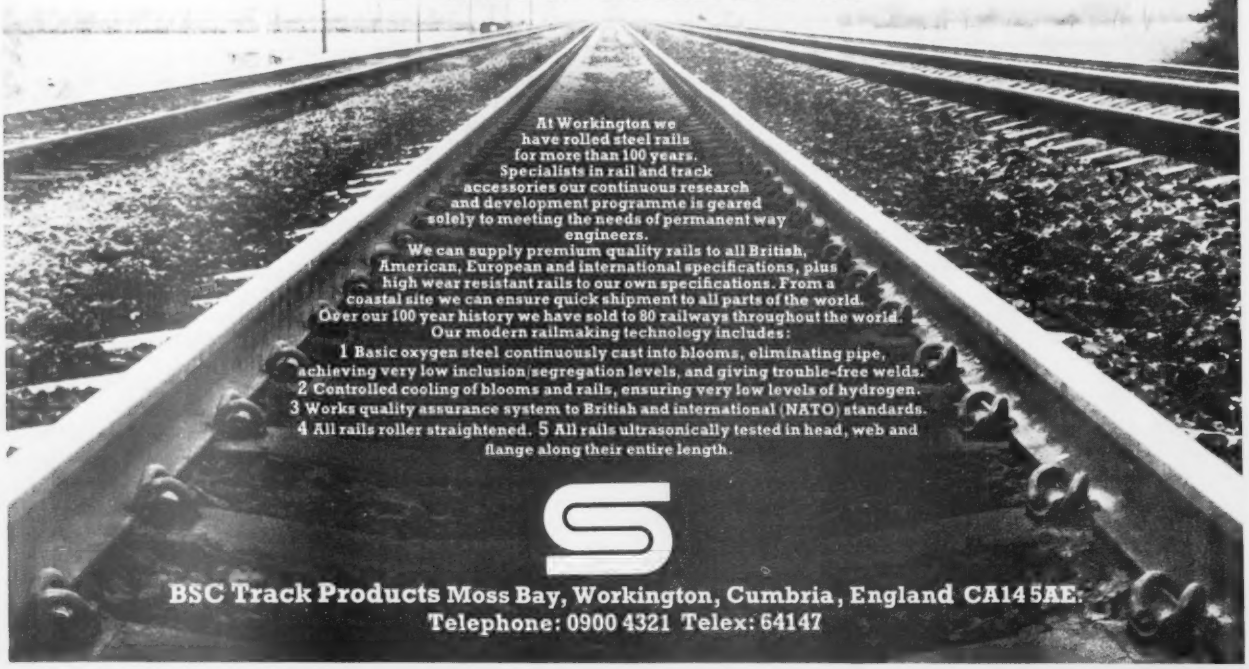
BSC track products will keep you on the straight ...and narrow



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2 Controlled cooling of blooms and rails, ensuring very low levels of hydrogen.
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4 All rails roller straightened. 5 All rails ultrasonically tested in head, web and flange along their entire length.

S

BSC Track Products Moss Bay, Workington, Cumbria, England CA14 5AE.
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and to further improve traditional products like rails and wheels. BSC now produces over £20 million worth of steel products for the railway industry export market – a third of its entire railway business. The new foundry at River Don in Sheffield has further increased both the capacity and the quality of BSC cast products, as well as reducing costs, and is at present heavily involved in the production of bogie castings for the north American market.

Another plant with United States orders is the new BOS plant at Teesside, where steel is made in continuously cast blooms for rolling at the Workington plant, itself now provided with new equipment enabling it to supply the heaviest rail sections in the world. Rails made by the continuously cast method are now being evaluated by several United States railroads who impose perhaps the most stringent performance conditions in the world. A new form of hot dipped zinc coated steel, known as Galvatite IZ, is being evaluated on several BR prototype vehicles. BSC claims that the great advantage for railway coach construction is that it is particularly easy to spotweld while at the same time providing a superior base for painting with minimal pre-treatment and better overall protection against corrosion.

African railwaymen see British track products

This group of government officials and senior railwaymen from French-speaking African countries inspecting a Dow-Mac concrete level crossing at a recent British Rail permanent way exhibition in Cambridge. Dow-Mac is a member of Railway Trackwork Engineers, an association of 10 British companies specialising in railway trackwork from the formation upwards.

On the right track

Alan Williams finds that with the challenge of the development of two entirely new trains British railway engineers have not been slow to develop new ideas and adopt those of their aerospace colleagues.

The rapid development of BR's two super trains – the High Speed Train and the Advanced Passenger Train – has demanded considerable advances in other areas of rail technology, particularly in the permanent way and signalling fields.

On almost all high-speed lines today the individual rails are welded at each joint to form continuous welded rail (cwr) often up to a mile in length, and are carried on concrete sleepers with resilient rail fastenings. But even this form of heavy-duty track requires constant attention to keep it in prime condition for high-speed running, and British Rail engineers have been experimenting for some time with both concrete and asphalt trackbeds employing latest roadbuilding practice.

The advantage of the asphalt trackbed, which holds pre-cast concrete segments in place, is that it can be subjected to traffic loading within a few hours of laying, and is therefore ideal for renewal where occupation time is limited. But for absolute rigidity and thus constant, almost permanent alignment coupled with exceptional durability, there is little to challenge the solid reinforced concrete trackbed, and for this reason it has already found wide use in tunnel locations. Using either the old ballast of existing formations, or on new alignments, ground prepared by methods similar to those used in road building, a special paving train, known as a slip-form paver, combines pre-mixed concrete and sections of reinforcement material into a continuous reinforced concrete slab along the intended route, at a rate of about 40 m (130 ft) per hour. The unit is propelled by hydraulic power, is self-levelling and has automatic power steering controlled by guide wires stretched along the intended line of route. Known as Pact (Paved Concrete Track), the concrete is shaped to give drainage towards a central channel, can be laid to an accuracy of 1 mm in 10 m, and is left with pre-drilled holes ready to accept rail fastenings. In

Track research and development is a major activity at the Railway Technical Centre, Derby. Research into new forms of accurate, maintenance free track, for today's railway and future very-high-speed railways, includes Pact – Paved Concrete Track. Above: Test site at Radcliffe on Trent, Nottingham, where six experimental lengths of curved concrete track were evaluated. Below: The ribbon of accurately profiled concrete left as the paving train moves forward up to 40 m per hour.

addition to its greater rigidity and freedom from maintenance, concrete trackbed is estimated to have a serviceable life of over 50 years.

Super signals

British railway signalling has traditionally led the world, especially in its simplicity, and there have been considerable technological developments, too, in this sphere, with the widespread adoption on British Rail of multiple-aspect colour light signals and continuous track circuiting worked from centralised power signal boxes sometimes supervising hundreds of miles of track. On BR's west coast main line over which Advanced Passenger Trains are to operate next year, track-to-train communications have been improved by the introduction of transponders to give APT drivers information about permitted maximum speeds, which differ from those for other trains, and distance travelled. BR's Research Department is developing a continuous cab signalling system which provides a continuous indication of the permitted maximum speed and a comparison with actual speeds. A small computer on the train is the brain of the system, and when programmed with the individual characteristics of the train and fed such physical details of the line as signal indications, curves, gradients and speed restrictions from the track equipment, it calculates the optimum running speed and presents it to the driver as a speed instruction. Ultimately, of course, the system could be developed to provide fully automatic driving control. Another British innovation, associated with the centralisation of signalling, is the increasing adoption of closed circuit television to monitor road traffic at level crossings, enabling the signalman to operate the lifting barriers protecting the crossing from his position perhaps many miles from the crossing itself.

Radio, too, is finding increased application in railway use, both between signalling centres themselves and between the signalling centre and the trains under its control. British Rail is conducting experiments on its recently electrified suburban line out of London's King's Cross station to see how the latest radio technology, developed for space use, stands up to rail applications. Not only does the experiment cover the provision of a two-way speech link, but also a data transmission link enabling messages to be passed to and from visual display units in both the signal box and the drivers cab. Indications can be selective, so that they are only displayed in the cab of the train to which they apply, and the equipment is arranged so that any message from a train automatically includes its own individual identity. At the very least, such a system could replace existing telephone links from fixed lineside locations, and in more complex form could quite possibly be used on lightly-used lines to provide a centralised control system where traditional fixed signalling equipment cannot be justified.

Uplifting future?

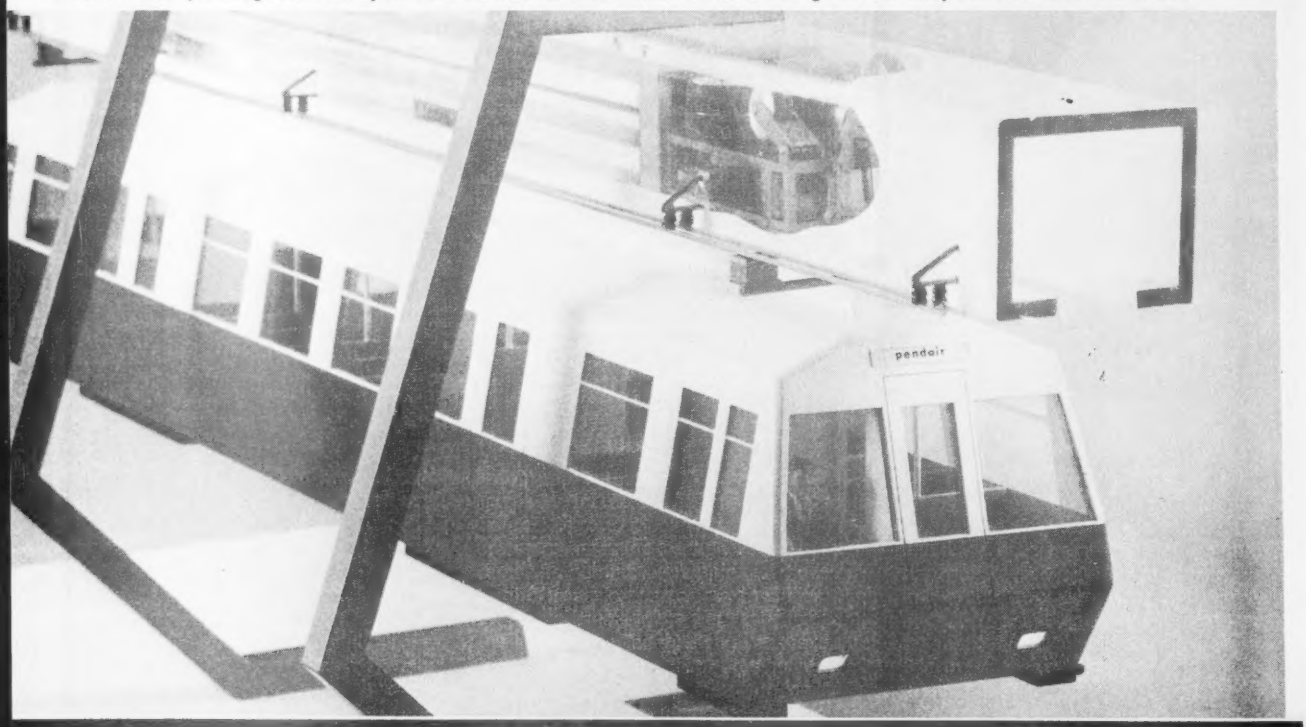
As for the future, the increasing worldwide awareness of fuel costs, and the realisation that fossil fuels are finite, has brought renewed interest in railways, although many of the more bizarre systems spawned by the explosion of interest in advanced ground transport in the early 1970s now seem unlikely to be developed. However, scientists in both Germany and Britain are working on magnetic levitation (Maglev); the prototype British Rail maglev vehicle is a 12-seat car of about 2½ tons supported on a single rectangular concrete guide rail by a pair of lift magnets in each corner, with current collection from a side conductor. Guidance as well as lift is provided by offsetting the suspension magnets slightly above the guide rail, while propulsion is by two single-sided linear induction motors. Preliminary calculations show that operating costs with a nominal 12 mm (0.5 in) air gap while the vehicle is 'flying' would not be unlike those of a similar but rubber-tyred vehicle.

Other researchers have been investigating electrodynamic levitation, in which lift is provided by moving powerful, super-conducting magnets, possibly cryogenic, over an aluminium track. The advantage of electrodynamic levitation is that lift, guidance and propulsion are all derived from the one device, and size is less of a limiting factor because hover height increases with speed. But, like the maglev systems, no fail-safe system has yet been developed to prevent the 'crash landing' that would result from the sudden loss of levitation at high speed.

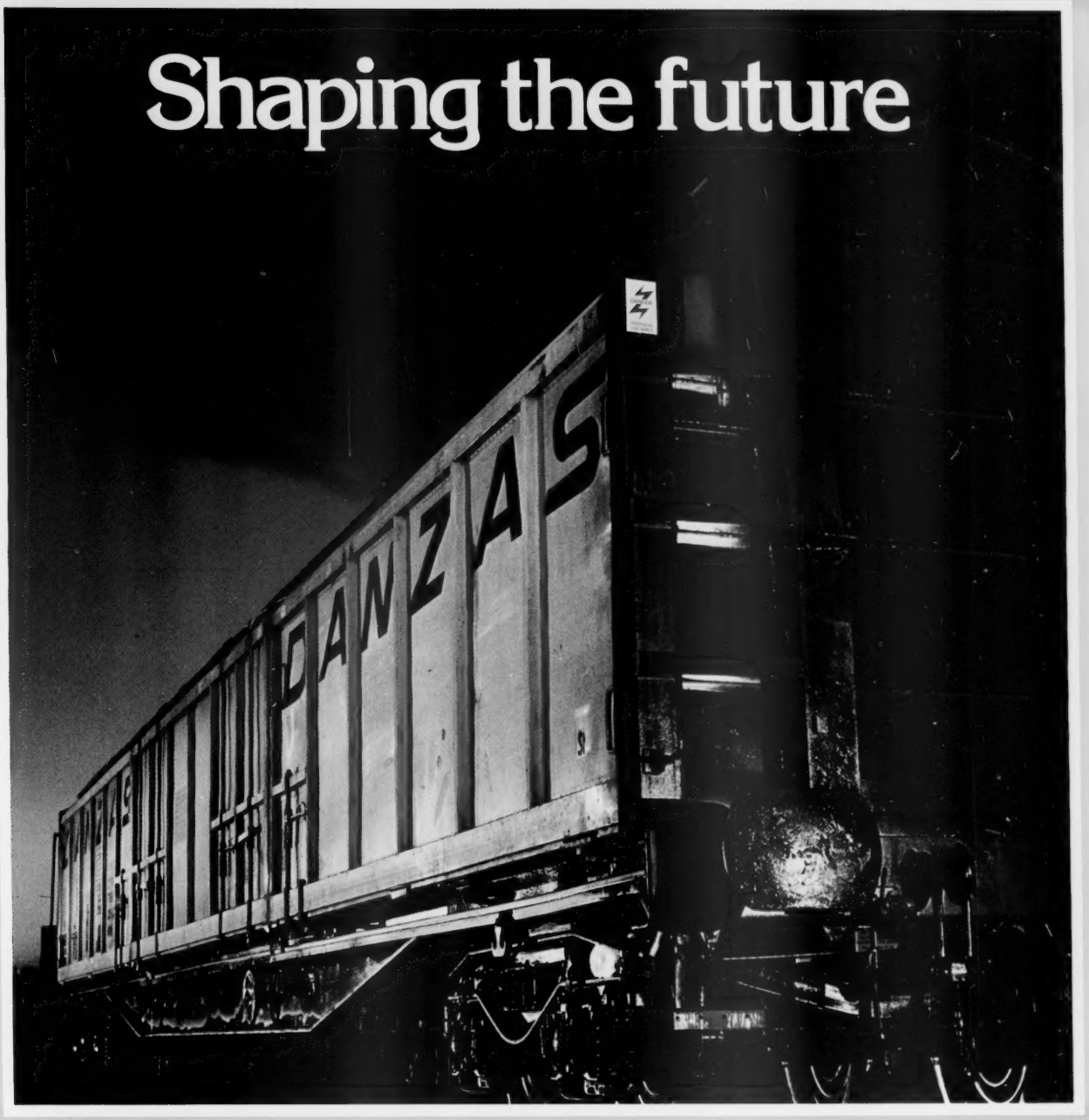
In the immediate future, however, it seems likely that cost-conscious railway administrations will opt for the well-proven steel wheel on steel rail for future investment.

Pendulum air suspension – new concept in urban mass transport

This scale model shows the working principles of the Pendair air suspension system – a new concept in urban mass transport developed by Bliss-Pendair Ltd of Sir Robert McAlpine and Sons, 40 Bernard Street, London WC1N 1LG. The 50-seater 'hovertrain' is suspended from an overhead track that is supported by slender beams. It runs on a cushion of air provided by a single centrifugal fan contained within the hollow overhead track. This also carries the electricity supply – one of the two power collectors is pictured above the front end of the model coach. Propulsion is provided by two pneumatic-tyred bogies, driven by twin electric motors, one of which is visible through the cut-away track section of the model.



Shaping the future



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OECD ministers review guidelines for multinationals

Ministers from member states of the Organisation for Economic Co-operation and Development (OECD), at a meeting in Paris last week, re-affirmed their continued support for the 1976 guidelines for multinational enterprises and agreed to strengthen their co-operation and consultation in the field of international investment.

Reviewing the work of the organisation's committee on international investment and multinational enterprises, and progress achieved in the three years since the ministerial declaration and associated investment decisions were introduced, they recommended only one change to the guidelines. While they recognised it would have been desirable to leave the guidelines unchanged to assist enterprises to accept and assimilate them into their day-to-day operations, they considered that there was a real gap in the declaration and that this single amendment should be made. Ministers also amended the decisions explicitly to allow for clarification and consultation with business and trade union interests.

When the guidelines were introduced, they represented the first attempt by an international governmental organisation to lay down agreed standards of practice for multinational enterprises. Since then, the International Labour Organisation (ILO) has produced guidelines on social and employment practices and the United Nations has been working on a code of conduct on transnational corporations. But the present review gives the first real opportunity to assess the effectiveness of the voluntary OECD guidelines as a framework within which to promote the positive contribution that multinationals can make to economic and social progress while minimising any negative effects.

Encouraging report

The committee's report is encouraging. In only a few cases have enterprises been shown to be acting contrary to the guidelines and there is evidence of a growing awareness and support for them among companies. Over 50 British companies and some 200 enterprises in all have so far indicated their willingness to observe them. The report points, however, to the need for even wider acceptance and use particularly in day-to-day management.

The one substantive change to the guidelines recommended by the committee and accepted by ministers was in the employment and industrial relations chapter. In the light of experience, it was considered necessary to expand the guideline dealing with negotiations on conditions of employment to express ministers' firm view that companies should not transfer workers from one country to another to influence such negotiations unfairly. Although this issue is covered in the ILO tripartite declaration, it was not foreseen when the OECD guidelines were drafted (see box).

The committee also included in its report a number of comments aimed at clarifying the guidelines, based on experience of cases brought to its attention. Ministers agreed that these comments were useful in helping companies understand the intention behind the guidelines and that the committee should continue to publish such clarifications. They also decided to formalise the arrangements for consultation with business and employee interests through the OECD's business and industry advisory committee and trade union advisory committee.

To improve the flow of information between member states, the governments agreed to prepare biennial reports on their experience of the guidelines and the activities of multinational enterprises and international investment in general. These would then be used as a basis for a mid-term report to the council in June 1982. Recognising the need, however, for a period of stability during which companies could assimilate the guidelines into their day-to-day operations, ministers affirmed that there would be no further amendment before the next ministerial review in June 1984.

National treatment

Work on the national treatment instrument to date has focussed identifying areas where member states do not extend equality of treatment. Work in the future will centre on achieving greater transparency of these exceptions, particularly where they are as a result of administrative practice, and on reducing their number wherever possible.

Incentives and disincentives

Although the 1976 declaration provides that weight should be given to the interests of other member states when applying official incentives and disincentives specifically to international direct investment, it was recognised that little was known about the effects of more general incentive and disincentive measures applied by member governments. It was agreed that in the medium-term a broad-based study of these effects should be carried out by the committee.

Further information is available from the International Industrial and Commercial Policy Division, Department of Industry, Abell House, John Islip Street, London SW1P 4LN, tel. 01-211 7279 or 01-211 4893.

OECD guidelines

The OECD guidelines are part of a package of measures aimed at improving the international investment climate, which were adopted in June 1976 by ministers from 23 member governments of the OECD; Turkey was the only country that did not take part. The guidelines set standards of conduct in such areas of company activity as general policy, disclosure of information, competition, finance and employment and industrial relations. Although addressed specifically to multinational companies, the guidelines represent good practice for all. They have the active support of the UK government, the CBI and the TUC. Observance is voluntary but compliance – particularly regarding provision of information – should do much to allay public concern about companies' activities and strengthen the basis of confidence between themselves, their employees and the governments of the OECD countries in which they operate.

Other parts of the OECD package deal with the responsibilities of member governments. They comprise:

- ☐ An undertaking that member governments would as far as possible treat multinational enterprises of other member countries in the same way as their own domestic enterprises (referred to as 'national treatment');
- ☐ A declaration recognising the need to take other member countries' interests into account when providing investment incentives.

The 1976 OECD declaration and decisions including the guidelines are reproduced in a white paper 'International investment: guidelines for multinational enterprises' (HMSO, 35p).

The revised guideline (new wording italicised) reads as follows:

Employment and industrial relations

Enterprises should, within the framework of law, regulations and prevailing labour relations and employment practices, in each of the countries in which they operate . . . (8) in the context of bona fide negotiations [1] with representatives of employees on conditions of employment, or while employees are exercising a right to organise, not threaten to utilise a capacity to transfer the whole or part of an operating unit from the country concerned *nor transfer employees from the enterprises' component entities in other countries* in order to influence unfairly those negotiations or to hinder the exercise of a right to organise.

[1] Bona fide negotiations may include labour disputes as part of the process of negotiation. Whether or not labour disputes are so included will be determined by the law and prevailing employment practices of particular countries.

Have you a good export picture?

Each week *Trade and Industry* publishes pictures illustrating Britain's export business. Companies with export successes are invited to send in the story with a photograph showing the goods in manufacture, ready for despatch, or, preferably, on arrival overseas. The story must, of course, reach us while it is still news.

Send your export photographs to the Editor, *Trade and Industry*, Eleventh Floor, Millbank Tower, Millbank, London SW1 4QU

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Overseas trade exhibitions

British firms fly high at Paris air show

From Dan Bramwell, BOTB, Le Bourget, Paris

'We've had an exceptionally busy show and a high throughput of visitors,' was how Mike Long, general marketing manager of Crawley-based Redifon Simulation Ltd, described his firm's progress at the thirty-third Paris international air show held at Le Bourget from 8 to 17 June. The event was opened by French President, Valery Giscard d'Estaing.

Another exhibitor with the same enthusiasm was Ken Smith, commercial director of Aircraft Porous Media Europe Ltd from Portsmouth, who described the show as 'first class'. Strong support for the UK's official joint venture came from David Mead, a senior product engineer with Cementation (Muffelite) Ltd, of Walton-on-Thames, Surrey which used the opportunity to invite contacts to its stand.

These three firms plus another 64 were all exhibiting at this year's Paris Air Show with the support of the British Overseas Trade Board and the Society of British Aerospace Companies. A further 12 of the largest UK companies involved in the UK aerospace industry were exhibiting independently, including British Aerospace for the first time since its formation in 1977. Thus, virtually all the leading companies in the UK industry were represented with exhibits ranging from complete aircraft and aero-engines to guided weapons, radar, electronics, equipment and the essential systems which contribute to the UK's total capability in design, development, production and ground and flight support.

The importance of the event was recognised by the British government with three different ministers visiting – Norman Tebbit of the Department of Trade, Michael Marshall of the Department of Industry and Geoffrey Pattie of the Ministry of Defence – and the British ambassador in Paris, Sir Reginald Hibbert.

Last year UK aerospace exports exceeded £1.17 billion and the president of the SBAC, Marshall of the RAF Sir Dennis Spotswood, recently said 'this year we expect to mark the close of a decade of steady expansion in our markets with continued improvements in our overseas earnings.'

British firms must feel optimistic about keeping to the SBAC president's statement. On the first day of the show, Bestobell Aviation Products Ltd received an order, of over £500,000, from Germany for parts for the Airbus project; Aircraft Furnishing Ltd received an order from Saab-Scania to supply passenger seats for the firm's Transporter light-transport aircraft; Redifon Flight Simulation announced the signing of an order for a Boeing 727-200 simulator (typically valued at £2.8 million) for United States' carrier Western Airlines; and the same firm later announced that as a result of negotiations concluded during the show they are to supply to Air France a Novoview SP1 computer-generated image visual system, to be integrated with an A300B Airbus flight simulator currently under construction.

Norman Tebbit (right), Parliamentary Under-Secretary of State for Trade, admires an infant lifejacket with RFD Inflatables Ltd sales executive Alex Levack.

Stan Scarisbrick, principal sales engineer of Louis Newmark (left) explains to Michael Marshall, Parliamentary Under-Secretary of State for Industry, the principles of the displacement gyro assembly.

Among the very latest technology from British firms on display was the Louis Newmark flight control system which is to be fitted to the Westland WG30 helicopter (which itself was airborne at the show); a new 200-litre BOC Aviation liquid oxygen dispenser; Chelton (Electrostatics) was displaying a new communications and homing system ideally suited for installation in ground-support vehicles and ships; the Gloster Saro 'Javelin' heavy foam tender was on show in the static park; Rolls-Royce Motors Ltd was displaying its new model 10-368 light aircraft engine; and following its sensational debut at last year's Farnborough Show, Fairey Engineering was displaying the Harrier ski-jump for only the second time in public.

To many firms the Paris air show is just a flag-waving event as they do not expect to do any major new business on the stands, but as a representative for Houchin Ltd said, 'a firm is noticed more if it misses a show than if it exhibits'. With the present state of the aerospace industry nobody can afford to miss either the Paris air show or Farnborough, where next year British firms will have the opportunity to show their goods to the world at Farnborough International 80, 31 August-7 September 1980.

'Old hands' do well at Ligna

From Michael Whelan, British consulate-general, Hanover

There was a general air of satisfaction amongst the 25 British exhibitors at the third international woodworking machinery exhibition held at the giant Hanover fair grounds from 23 to 29 May.

The British firms, 19 of which took part in a joint venture supported by the British Overseas Trade Board and sponsored by the Machine Tool Trades Association, included some 'old hands' at Hanover such as Wadkin, Brookman, Interwood, Fell and Stinner, and companies were on the whole well pleased with the interest shown in their equipment.

All firms reported a high level of inquiries, not only from Germany, but from all parts of the world. As always with capital goods fairs it is difficult to quantify the success or otherwise at this stage. It was therefore satisfying to hear from newcomers such as Woodtape that it had taken orders for some 50 of its edge bonding machines – an order valued at about £30,000. The company also appointed agents throughout Europe. Forest and Sawmill Equipment, showing for the second time here, was overwhelmed by the interest shown in its band mills and expect orders to exceed £60,000.

Ligna '79 was the third show of its kind since

it began in 1975, after it had grown too large for the main Hanover fair. It has expanded in stature and importance since then and 1979 was a story of record breaking attendances. There were 865 exhibitors (804 in 1977); 405 came from 26 foreign countries and by far the strongest contingent belonged to Italy.

The show attracted about 70 000 visitors (an increase of 15 per cent) 26 000 coming from European and overseas countries, lending the fair a truly international flavour.

From the host nation's point of view the exhibition was not only considered a show of strength by the German woodworking machinery industry but also as confirmation of the steady upswing in the German furniture and building industries.

The exhibition organisers have hinted that for the next Ligna, in 1981, stand space is already at a premium.

British lead at world gas conference in Toronto

From G. C. Fedrick, British consulate-general, Toronto

More than 2000 senior executives representing the gas industries of 36 countries met in Toronto from 27 May to 1 June for the fourteenth world gas conference and associated exhibition of gas-related products and services.

The rapid rate of growth and development in Britain's gas industry was demonstrated, both at the conference and in the exhibition by the large British contingent, headed by the chairman of British Gas Sir Denis Rooke, whose paper 'Gas – the road ahead' was received with great acclaim.

At the exhibition a wealth of new products, techniques and services spanning the entire spectrum of gas applications was very effectively displayed by the 18 members of the British joint venture sponsored by the Society of British Gas Industries and the British Overseas Trade Board. One of the largest and most innovative was that of British Gas whose models and displays illustrated its wide-ranging expertise.

The show was remarkably well-attended and all participants were well-pleased with results and reported making useful contacts within the international gas community.

In the week-long event, where technical competence and expertise was in abundance, the UK demonstrated conclusively that it holds a leading position in the world as a producer, distributor and user of gas.

British technical and language books interest Poles

From E. Patterson, British embassy, Warsaw

Greatest interest at the twenty-fifth Warsaw international book fair which was held in the Palace of Culture from 16 to 21 May was in technical, medical and English-language books. The fair, is the largest book fair in eastern Europe and the second largest in the world.

As in previous years the event attracted a large British interest covering 40 stands and representing over 100 British book publishers and agents. There was a joint venture of 28 British companies sponsored by the Book Development Council and the British Overseas Trade Board..

The largest single British exhibitor was the British Council which displayed some 700 titles out of the 38 000 published in Britain last year.

In spite of Poland's current economic difficulties and the consequent limits on payments in hard currency for imported books and book publishing rights, all major western countries as well as members of Comecon were strongly represented at this year's event.

A general view of the Warsaw book fair.

Wide range of UK products shown at Milan print fair

Mr B. Turner, deputy managing director of Adana Printing Machines, demonstrating one of his company's exhibits. Adana was one of a group of 29 companies, backed by the British Overseas Trade Board, taking part in the Milan international exhibition for the printing, publishing, paper and paper processing industries which was held from 19 to 27 May. The British display included offset lithographic blankets, a montage register machine, rotary collators, duplicating systems, a radio frequency drier, bag making and roll winding machines, pumps, tanks and wax coating machines.

Overseas trade country data

Australia

Vices. The Australian government having considered the report and recommendations of the Industries Assistance Commission into the question of assistance for the local production of vices and parts thereof has decided that the following items will be subject to the rates of duty indicated with effect from 6 June 1979.

The tariff quota restrictions which have been applied to vices since August 1977 have now been removed.

Goods	General	Per cent Preferential
Vices		
As prescribed by by-law	20	20
Vices, as follows:		
a Engineers', having a jaw width not exceeding 90 mm;		
b Woodworkers', having a jaw width not exceeding 155 mm		
Other		
01 Parts	20	20
02 Remainder	20	20

Inquiries: OTAR 01-248 5757 ext. 468/469/401.

Chemicals. The Australian government, having considered the report and recommendations of the Industries Assistance Commission for the local production of a range of chemicals, has decided that the following items will be subject to the rates of duty shown, with effect from 6 June 1979.

Tariff no./Goods	General	Per cent Preferential
15.10		
Fatty alcohols	25	25
29.04		
a butyl alcohols;		
b monohydric primary alcohols containing not less than six carbon atoms:		
Butyl alcohols other than n-butyl alcohols; monohydric primary alcohols containing not less than six carbon atoms	25	25
n-butyl alcohols	25	25
Goods, as follows:		
a ethanediol;		
b mannitol;		
c sorbitol;		
a ethanediol	30	22.5
b sorbitol		
mannitol	30	22.5
29.11		
Acetaldehyde	25	25
29.14		
Acids, salts and esters, as follows:	19	11
a aliphatic acids containing not less than eight and not more than 22 carbon atoms, and their salts;		
b calcium propionate;		
c sodium propionate;		
d amyl acetates;		
e ethyl acetates;		
f esters of monoacids in which a component is an ethylene oxide derivative, other than esters of acetic acid;		
g esters of aliphatic monoacids in which any aliphatic acid component contains not less than eight and not more than 22 carbon atoms, not being goods of a kind used for flavouring;		
h crude pyroligneous acid;		
d salts of acetic acid		
Goods, as follows:	30	22.5
a t-butyl perbenzoate;		
b esters of acetic acid in which a component is an ethylene oxide derivative;		
c peroxides		
Goods, as follows:		
a acetic acid;		
b acetic anhydride;		
c butyl acetates;		
d vinyl acetate:		
Acetic acid	25	25
Acetic anhydride	25	25
Butyl acetates other than n-butyl acetate	25	25
n-butyl acetate	25	25
Vinyl acetate	25	25
a acrylic acid and its esters;		
b methacrylic acid and its esters;		
c glycerol triacatate:		
Glycerol triacetate	6	Free
Other:		
Goods for use otherwise than in the manufacture of paints or lacquers	Free	Free
Other	25	25
29.15		
Goods, as follows:	30	24
a bis (ethylene glycol monomethyl ether) adipate;		
b bis (triethylene glycol monomethyl ether) adipate		
Goods, as follows:		
a esters not falling within sub-item 29.15.1;		
b isophthalic acid;		
c phthalic acid;		
d phthalic anhydride;		
Goods, as follows:	25	25
a esters not falling within sub-item 29.15.1;		
b isophthalic acid;		
c phthalic acid		
Phthalic anhydride	25	25
Maleic anhydride	22.5	22.5
Goods, as follows:	11	11
a lead maleate;		
b lead phthalate		
29.16		
Goods, as follows:		
a 2,4-dichlorophenoxyacetic acid and its salts and esters;		
b 2,4,5-trichlorophenoxyacetic acid and its salts and esters;		
2,4-dichlorophenoxyacetic acid and its salts and esters	30	22.5
2,4,5-trichlorophenoxyacetic acid and its salts and esters	30	22.5
Esters in which:	25	25
a the phthalic acid content;		
b the isophthalic acid content;		
or		
c the phthalic and isophthalic acid content,		
of the acid component is not less than 50 per cent by weight		
38.19		
Goods, as follows:		
a carbon blocks, plates, bars and similar semi-manufactures, of metallo-graphitic or other grades;		
b stencil correctors and correction fluids, put up in packs for sale by retail;		
c lignin derivatives;		
d seger cones and other fusible ceramic firing testers;		
e organic derivatives of clay minerals;		
f ammoniacal gas liquors and spent oxide produced in coal gas purification;		
g products and preparations in which the constituent that gives the goods their essential character is aluminium;		
h products and preparations in which the constituent that gives the goods their essential character is calcium carbide:		
Carbon blocks, plates, bars and similar semi-manufactures, of metallo-graphitic or other grades, being goods of a kind used solely or principally for electrical purposes	13	13
Stencil correctors and correction fluids, put up in packs for sale by retail:		
Stencil correctors	15	13
Other	15	15
Products and preparations in which the constituent that gives the goods their essential character is aluminium	15	15
Products and preparations in which the constituent that gives the goods their essential character is calcium carbide	10	10
Other	Free	Free
Esters in which, and mixtures and preparations with a basis of esters in which:		
a the phthalic acid content;		
b the isophthalic acid content; or		
c the phthalic and isophthalic acid content,		
of the acid component is not less than 50 per cent by weight:		
Goods other than goods with a basis of diethyl phthalate, dimenthyl phthalate, or diethyl phthalate and dimethyl phthalate	25	25
Other	25	25
Put up for retail sale, not being goods in which the constituent that gives the goods their essential character is a substance falling within sub-item 15.10.1, 29.04.3, 29.11.3 or 29.14.3, sub-paragraph 29.14.891 or 29.14.899, sub-item 29.15.2 or 29.16.5, item 29.38, 29.39, 29.41 or 29.42, sub-item 29.44.9 or item 30.01 or 30.02	The rate of duty set out in this column that would apply to the goods if they consisted wholly of the constituent that gives the goods their essential character, or, if higher, 17%	The rate of duty set out in this column that would apply to the goods if they consisted wholly of the constituent that gives the goods their essential character, or, if higher 7.5%
Moulding compounds of cellulose acetate or cellulose acetate butyrate, not being adhesives:		
Cellulose acetate butyrate	19	19
Cellulose acetate	Free	Free

Inquiries: OTAR 01-248 5757 ext. 468/469/401.

Margarine. Following a report by the Industries Assistance Commission the Australian government has decided that item 16 in the third schedule to the Customs (Prohibited Imports) Regulations has been repealed and the restriction on margarines (tariff heading 15.13) are removed.

Inquiries: OTAR 01-248 5757 ext. 468/469/401.

Footwear and foundation garments. The Australian government recently announced that the import quota allocations for footwear

Further information

In many cases further information on the notices published on these pages is available to British exporters from the Department of Trade. The main branches concerned are: Commercial Relations and Exports (CRE) Divisions, 1 Victoria Street, London SW1H 0ET (tel. direct dialling); and Overseas Tariffs and Regulations Section (OTAR), Export Data Branch, Export Services and Promotions Division, Export House, 50 Ludgate Hill, London EC4M 7HU, tel. 01-248 5757. In each case, the relevant information source is indicated at the end of the notice by its initials (OTAR or CRE) and, in the case of OTAR, the telephone extension.

and foundation garments for the period 1 July to 31 December 1979 will be:

	Total allocation
Footwear	
Footwear with leather uppers (million pairs)	2.1
Footwear with non-leather uppers (million pairs	8.23
Thong sandals having a VFD less than $0.35 per pair (million pairs)	1.55
Thong sandals having a VFD from $0.35 per pair to less than $2.00 per pair (million pairs)	1.868
Parts for footwear ($ million)	1.0067
Foundation garments	
Brassieres (million units)	1.33

The government also announced that it has accepted the recommendations of the review committee that footwear importers be authorised to use up to 15 per cent of their quota for footwear with leather uppers to import footwear with non-leather uppers.

Inquiries: OTAR 01-248 5757 ext. 468/469/401.

Belgium

Animal feedingstuffs. The *Moniteur Belge* 99, 23 May, published a decree dated 27 April concerning the maximum levels of undesirable products and pesticidal residues permitted in animal feedingstuffs. The decree came into force on 1 May. Copies of this decree (in French) are available from OTAR 01-248 5757 ext. 288/466/467.

France

Deep-frozen, pre-packed fish. Importers are advised that a notice was published in the French *Official Journal*, 16 May, concerning the sizes of packaging for deep-frozen pre-packed fish.

Copies of the French text and an unofficial English translation are available from OTAR 01-248 5757 ext. 423/408/439.

Gibraltar

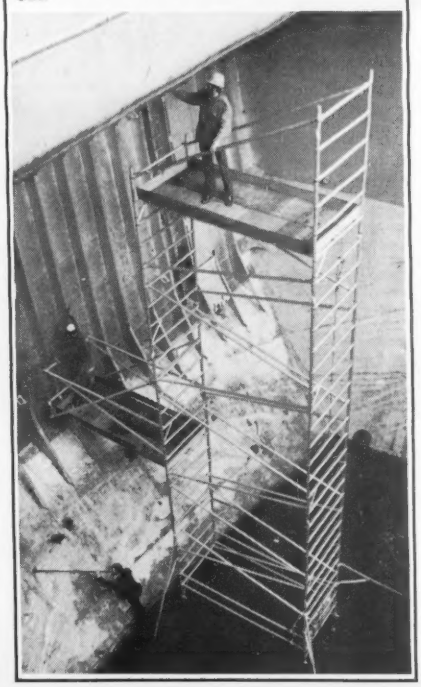
Duty changes. The following duty changes have been notified in the *Gibraltar Gazette* 1807, 1 May:

Item no.	Article	Duty
First part		
1	Malt liquor:	
	a In bottles, per gallon	100p
	b In casks, per gallon	50p
2	Motor spirit, per gallon	25p
3	Whisky:	
	a In bottles, per gallon	834p
	b In casks, per gallon	826p
4	Brandy:	
	a In bottles, per gallon	834p
	b In casks, per gallon	826p
5	Gin, rum, and other spirituous liquors (other than liqueurs):	
	a In bottles, per gallon	834p
	b In casks, per gallon	826p
6	Liqueurs and cordials (irrespective of strength):	
	a In bottles, per gallon	930p
	b In casks, per gallon	924p
9	Manufactured tobacco, per lb	200p
	With an additional duty per 1000 cigarettes of	990p
11	Still wines:	
	a In bottles, per gallon	145p
	b In casks, per gallon	70p
12	Sparkling wines, per gallon	280p
23	Fuel, diesel and gas oil, per gallon	4½p
28	vi Wheelchairs, artificial limbs, and orthopaedic appliances	Free
Second part		
1	a ii Motor vehicles, other than commercial vehicles, with an engine capacity of 1299 cc but not exceeding 1699 cc	22½% *Ad valorem*
	iiA Motor vehicles, other than commercial vehicles, with an engine capacity exceeding 1699 cc	25% *Ad valorem*
Third part		
1	On all goods for which *ad valorem* duty is prescribed by the first or second part of this schedule (other than the goods specified in paragraph 2 of this part), a surcharge of 20 per cent of the *ad valorem* duty that is so prescribed.	
2	Paragraph 1 of this part shall not apply to the following goods: a goods specified in item 7 of the first part of this schedule: Perfumed spirits, irrespective of strength; b Goods specified in item 25 of the first part of this schedule, being clothing or footwear: Goods not otherwise enumerated in either the first or second part of this schedule unless imported by or supplied to a public statutory authority exclusively for purposes of a public utility undertaking or imported by or supplied to Cable and Wireless Ltd exclusively for the purposes of transmitting telegraphic messages.	
3	This part of this schedule shall expire with the 30th day of April 1980	

No further information is available.
Inquiries: OTAR 01-248 5757 ext. 458/461.

Tanker cleaning tower

A 9.7 m-high, standard Climalloy span tower with a special cantilever section, being used by the crew of a 35 000-ton Greek bulk cargo ship – the MV *Maistros* – to clean the empty holds while at sea. Supplied by the export department of the plant sales division of Brentford-based Stephens and Carter, the tower avoids the costly business of the ship lying empty in port while cleaning is carried out.



CRE tel. Direct dialling
OTAR tel. 01-248 5757
Extensions to **OTAR** numbers are given at the end of each notice

Indonesia

Woodpulp and raw flax. The Indonesian government, has announced with effect from 4 April, an exemption of import duty and sales tax for 41 000 tons of woodpulp and 500 tons of raw flax (tariff heading 47.01 and 54.01 respectively) imported into Indonesia by five companies, to produce paper until the end of 1979, so that the import duty and sales tax will both be nil.

Inquiries: OTAR 01-248 5757 ext. 469/468/401.

Agrochemical industry. The Indonesian government, has announced that from 9 April, partial exemption of import duty and sales tax chargeable on the import of raw auxiliary materials for agrochemicals industry under heading 38.11.69, so that the import duty becomes 2½ per cent and the sales tax 2½ per cent.

Inquiries: OTAR 01-248 5757 ext. 469/468/401.

Polyester chips. The Indonesian government has announced that from 6 April total exemption from import duty and sales tax on the import of polyester chips under tariff heading 39.01.39.

The import duty and sales tax will both be nil.

Inquiries: OTAR 01-248 5757 ext. 469/468/401.

Billets of iron or steel. The Indonesian government has announced, from 22 March, partial exemption of import duty and sales tax chargeable on the import of billets of iron or steel under heading 73.07.00, so that the import duty becomes 2½ per cent and the sales tax 1¼ per cent.

Inquiries: OTAR 01-248 5757 ext. 469/468/401.

Jordan

Import duty changes. The Jordanian *Official Gazette* 2849, 26 March, announced the following changes to customs duty for the following items:

CCCN number/Description	Unit	Rate of duty
48.16		
Boxes, bags and other packing containers of paper or paperboard:		
a Paper bags intended for the packing of cement, ochre, asphalt, coal, salt, animal fertilisers and similar products		No change
b Currugated paperboard boxes, with ventilation for the transport of chicks		No change
c Match boxes		No change
d Other:		
i Boxes made of paperboard, kraft paper coated on both sides	*Ad val*	15%
ii Other	*Ad val*	8%
73.18		
Tubes and pipes (prepared or not) of iron or steel, other than those included in heading 73/19:		
a Of 3 or more inches in diameter		No change
b Other	*Ad val*	15%

Inquiries: OTAR 01-248 5757 ext. 7062/475.

Kenya

Development plan. A copy of the Kenya five-year development plan for 1979 to 1983 has been received by the Department of Trade and is available for reference in the Statistics and Market Intelligence Library (SMIL) where copies are available for loan. Applications will be dealt with in strict order of receipt.

Inquiries: SMIL 01-248 5757 ext. 368/369.

Lebanon

Wooden poles. The Lebanese *Official Gazette* 21, 24 May, published details of amendment 358 to the customs tariff which reduced the rate of duty on wooden poles for electric power lines falling under CCCN 44.03 21b from 18 per cent to 8 per cent *ad valorem*.

Inquiries: OTAR 01-248 5757 ext. 475/7062.

Luxembourg

Lamps and decorative objects. The *Luxembourg Memorial* A-no. 28, 10 April, published a decree dated 14 March prohibiting the sale of lamps and decorative objects containing certain dangerous solvents. Copies of this decree (in French) are available from OTAR 01-248 5757 ext. 288/466/467.

Philippines

Tariff amendments. On 16 February the Philippines government issued executive order 521 which came into force on 29 February and amended the import duty on the items listed below:

Per cent

Tariff no./Description of articles	New rate of duty
28.03	
Carbon (including carbon black):	
B Carbon black	*Ad val* 30
28.30	
Chlorides and oxychlorides:	
B Zinc chloride, technical or industrial grade	*Ad val* 30
C Calcium chloride and ammonium chloride, commercial	*Ad val* 50
28.40	
Phosphites, hypophosphites and phosphates:	
B Sodium tripolyphosphate and tetrasodium pyrophosphate	*Ad val* 30
38.08	
Rosin and resin acids, and derivatives thereof other than ester gums included in heading 39.05; rosin spirit and rosin oils:	
A Articles not included in subheading B hereof	*Ad val* 30
B Gum rosin	*Ad val* 50
40.02	
Synthetic rubber latex; pre-vulcanised synthetic rubber latex; synthetic rubber; factice derived from oils:	
A Synthetic rubber	*Ad val* 20
B Other	*Ad val* 30
40.10	
Transmission, conveyor or elevator belts or belting, of vulcanised rubber:	
A Articles not included in subheadings B and C hereof	*Ad val* 20
B Conveyor and transmission belts up to 46 in (117 cm) in width	*Ad val* 30
C V-belts	*Ad val* 50
55.09	
Other woven fabrics of cotton:	
A Tyre core fabric and tyre woven fabric when imported directly by automobile and truck tyre manufacturers for their exclusive use	*Ad val* 30
B Other	*Ad val* 70
56.07	
Woven fabrics of man-made fibres (discontinuous or waste):	
A Tyre cord fabric and tyre woven fabric when imported directly by automobile and truck tyre manufacturers for their exclusive use	*Ad val* 30
B Other	*Ad val* 70
84.23	
Excavating, levelling, tamping, boring and extracting machinery, stationary or mobile, for earth, minerals or ores (for example, mechanical shovels, coal-cutters, excavators, scrapers, levellers and bulldozers); pile-drivers, snow ploughs not self-propelled (including snow-plough attachments):	
A Articles not included in subheading B hereof	*Ad val* 10
B Cutting edges and end bits for bulldozers, scrapers, graders and levellers	*Ad val* 20
85.04	
Electric accumulators:	
A Hard rubber battery containers and cell	*Ad val* 30
B Other	*Ad val* 50
97.07	
Fish-hooks, line fishing rods and tackle; fish landing nets and butterfly nets; decoy 'birds', lark mirrors and similar hunting or shooting requisites:	
A Fish-hooks, line fishing rods of fibreglass reels and tackles	*Ad val* 20
B Other	*Ad val* 100

Inquiries: OTAR 01-248 5757 ext. 401/468/469.

Portugal

Import quotas. Portaria 143-C/79 provides for the retention, for the year to 31 March 1980, of the quota restrictions on consumer goods introduced by Portaria 331/78. The only alterations to the previous list are the removal of coffee (09.01), for which there is to be a special regime, and those goods under 39.07.

Certain goods within the following CCCN numbers are affected by the quotas:

08.01, 73.36, 84.15, 84.17, 84.19, 84.40, 84.41, 85.03, 85.06, 85.12, 85.15, 87.09, 87.10, 92.11, 92.12, 93.04, 93.05, 94.01, 94.03, 97.01, 97.02, 97.03

Those wishing to know if their goods are affected may address their inquiries, quoting CCCN numbers, to OTAR 01-248 5757 ext. 460.

Saudi Arabia

Contractors to government departments. Information received from the British embassy in Saudi Arabia indicates that foreign contractors and sub-contractors will have to obtain a licence from the Ministry of Commerce (ie temporary commercial registration) before undertaking work on government contracts.

The foreign contractor or sub-contractor will not need to form a local company but will, at least, have to appoint a local Saudi agent to qualify for registration.

Inquiries: CRE 01-215 5221.

South Africa

Customs tariff changes. The following amendments were published in the South African *Government Gazette*, 25 May:

R.1062, CCCN 39.01 and 84.11: 1 Specific provisions, at the existing rate of duty, are made for urea formaldehyde moulding powders and melamine formaldehyde moulding powers. 2 The rate of duty on hermetically sealed refrigerating compressors not exceeding 0.125 kW is reduced from 25 per cent to free.

Import surcharge
R.1063, CCCN 39.01.20.06 and 39.01.20.31 have been deleted. CCCN 39.01.20.07, 39.01.20.09, 39.01.20.32 and 29.01.20.34 have been added to the list of exclusion for import surcharge purposes.

Industrial rebates
R.1064, items 306.01, 306.02, 306.04, 306.09, 307.01, 307.07, 308.01, 311.01, 317.11 and 321.01, CCCN 28.00, 29.07, 29.35, 28.00, 28.31, 28.23 and 28.28:
1 Provisions are made for a rebate of the full duty on:
a ethyl oxalacetate, for the manufacture of phenyl pyrazolic acid;
b aniline, for the manufacture of sulphanilic acid;
c alpha-naphthylamine, for the manufacture of sodium naphthiconate;
d;
i 2-naphthol-6-sulphonic acid;
ii naphthol-3,6-disulphonic acid;
iii 4-hydroxynaphthalene-1-sulphonic acid;
iv sulphonic acid;
v sodium naphthionate; and
vi phenyl pyrazolic acid,
for the manufacture of organic dyestuffs; and
e distearyl thiodipropionate for the manufacture of artificial resins and plastics materials.
2 The provisions for a rebate of duty on copper oxides:
a for use as active ingredients in the manufacture of stock remedies and agricultural pesticides;
b for use as anti-oxidants in the manufacture of synthetic rubber;
c for use in leather tanning and finishing;
d for use as bleaching agents by the textile industry;
e for general industrial purposes; and
f for use as pigments or colours,
are withdrawn.
3 The provision for a rebate of duty on hydrogen peroxide for use as a bleaching agent by the textile industry is withdrawn as it is free of duty.
4 The provision for a rebate of duty on oxides for compounding with rubber in the manufacture of insulated electric cable and wire, is withdrawn.

Inquiries: OTAR 01-248 5757 ext. 471/472/473/462.

Syria

Food labelling regulations. The Ministry of Industry (Industrial Testing and Research Centre) has issued decree 4, 18 January, which implements the marking and labelling in Arabic of the following foodstuffs, whether imported or locally produced, with effect from 31 December 1979:

Edible oils and butter ghee; milk of all types; cream of all types; juice of all types; tea; coffee and its derivatives; canned beans

No further information is available but when precise details are received another notice will be issued.

Inquiries: OTAR 01-248 5757 ext. 475/420.

Thailand

Tariff amendments. The Thai Ministry of Finance has introduced notice Sor. Kor. 3/2522 which came into effect on 18 April, which amends the import duty on the products listed below to read as follows:

Tariff no./Description	Rate of duty: *Ad valorem* (%)	Specific duty: Unit	Specific duty: Rate per unit Baht
22.09			
Brandy	60	l	120
Others	60	l	65
28.20			
Aluminium oxide and aluminium hydroxide, including artificial corundum, except aluminatrihydrate	10	—	—
28.30			
b Others, except calcium chloride, magnesium chloride, zinc chloride and ammonium chloride	10	—	—
37.01			
b Those for making printing plate	10	—	—
70.10			
a Glass bottles coated with anti-solution substance, for containing saline solution, capacity 0.5 litres	10	kg	0.30
b Glass bottles coated with anti-solution substance, for containing saline solution, capacity 1 litre	10	—	—

Tariff no./Description	Rate of duty		
	Ad valorem (%)	Specific duty	
		Unit	Rate per unit Baht
73.14			
a Iron or steel wire which has been galvanised, for use in the manufacture of stranded wire, cable, stranded wire of cordage or rope type, plaited tape, sling wire or similar objects, except in the manufacture of insulated cable	5	kg	0.50
b Unplated iron or steel wire for use in the manufacture of stranded wire, cable, stranded wire of cordage or rope type, plaited tape, sling wire or similar objects, but except in the manufacture of insulated cable	5	kg	0.50

Inquiries: OTAR 01-248 5757 ext. 401/468/469.

Turkey

Devaluation. The Turkish authorities announced on 12 June a major extension of the multiple exchange rate system which has been operating in Turkey over the last two months. It amounts, in practice, to a devaluation of the Turkish lira, against the US dollar, of 43 per cent; some 20 other major currencies are also affected.

Two new rates of exchange have been introduced for the Turkish lira against each foreign currency. The higher, standard rate (TL47.10 = US$1) applies to the majority of imports and exports as well to workers' remittances and tourists. The lower rate (TL35 = US$1) will be used for basic agricultural exports and for imports of crude oil, petroleum products and fertilisers.

In the case of sterling the new higher rate is TL97.12 = £1 and the lower rate TL72.17 = £1.

Inquiries: CRE 01-215 5339.

Import duty charges. The import duty on empty glass tubes used in the manufacture of television picture tubes, tariff heading 70.11, has been reduced from 50 per cent to 25 per cent from 10 April.

The import duty on television picture tubes, tariff heading 95.21, has been increased from 1 per cent to 35 per cent as from 10 April.

A recent announcement in the *Government Gazette* stated that all necessary equipment for the exploration and production of oil in Turkey will be exempt from import duty and additional taxes for a further period of 15 years from 7 March 1979. This measure was first introduced in 1954 under article 112 of the Petroleum Law.

Inquiries: OTAR 01-248 5757 ext. 439.

United States

Model radio-controlled equipment. The *Federal Register*, 10 May, published a notice by the United States Customs Service announcing receipt of a petition from an American manufacturer of radio remote-control apparatus requesting the reclassification of such imported merchandise designed to be used with toy and model airplanes, boats, tanks, and similar articles. Such a reclassification would result in a substantial increase in duty payable.

Comments from those interested (three copies) must be received on or before 9 July.

Inquiries: CRE 01-215 5397.

Overseas trade export services

New Brantford collection in west country

Brantford International has extended its groupage operations from the west country by introducing a daily vehicle collection service to operate between its terminal at Avonmouth and the South Wales area.

A comprehensive service for groupage consignments by container/TIR trailer is offered to most destinations throughout Europe and Scandinavia. Traffic for despatch by surface means will be routed via the Avonmouth terminal, where a separate operating section exists to cover those areas.

Air-freight consignments will be handled through Brantford's office at Bristol airport, where direct services are available.

For other destinations there is a special road delivery every evening to Gatwick and London (Heathrow) to connect with the early morning departures from those airports.

Further information: circle 515

Mitchell Cotts introduces 'Airbridge' cargo link

Mitchell Cotts Airfreight, in conjunction with French forwarding agents Technotrans Air System, has launched a new flat charge door-to-door delivery service for small and medium-sized packages sent between London and Paris in either direction.

This cross-channel air-cargo link, named 'Airbridge', offers door-to-door collection and delivery within a guaranteed 36 hours between the two cities and their close suburbs.

Freepost reader service

For further information on items in this section, circle the corresponding number on the reader services page near the end of the magazine.

Any package up to a maximum of 45 kg can be handled for a flat rate of £45 excluding customs taxes and duties. The only items which cannot be accepted are those classified as hazardous.

The new service, which allows payment to be made either by the consignor or consignee, takes care of all air-freight documentation including export and import certification. Packages can be picked up during normal working hours between Monday and Friday.

Further information: circle 516

New Ferrymasters depot opened at Ipswich

Ferrymasters has opened a new 13-bay depot on the White House industrial estate, Ipswich to provide an additional presence to support the company's growing 'central corridor' traffic. The depot represents an investment of over £700,000.

The depot stands on a five-acre site built to Ferrymasters, requirements, and includes a 6000 sq. ft. office block and 10 000 sq. ft. warehouse. Housed at the depot, along with the sizeable workshops, are Ferrymasters import department, traffic department and administration departments.

The company's export department, computer department and quay/maintenance staff will remain at Ferrymasters' Ipswich premises.

Further information: circle 517

Ferrymasters' van semi-trailer rolling off at Ipswich next to the company's existing premises at West Bank Terminal.

Statistics

The economy: selected indicators[1]

Series are seasonally adjusted except where shown otherwise

	Gross domestic product (average estimate)	Consumers' expenditure	Fixed capital expenditure			Changes in stocks				Balance of payments		
				of which			of which					
			Total	Manufacturing industry	Distributive and service industries excl. shipping	Total	Manufacturing industry	Wholesalers'	Retailers'	Current balance	Visible balance	Invisible balance
	at 1975 prices		at 1975 prices			at 1975 prices				at current prices		
Base of index	1975											
Series in		£ million	£ million			£ million				£ million		
Stock level at end-1977						34,469	19,995	4,540	3,181			
1973	103.3	65 586	21 609	3 504	4 674	2 983	1 336	432	624	−967	−2 383	1 416
1974	101.4	64 212	21 173	3 822	4 605	1 462	1 288	361	−180	−3 550	−5 235	1 685
1975	100.0	63 385	20 536	3 522	3 841	−1 625	−1 221	−249	−100	−1 787	−3 236	1 449
1976	102.9	63 540	20 395	3 345	3 926	260	316	131	13	−1 072	−3 601	2 529
1977	104.9	62 954	19 961	3 573	4 325	978	442	266	29	371	−1 744	2 115
1978	108.1	66 397	20 514	3 856	4 677	962	597	− 6	333	443	−1 175	1 618
1976 3rd qtr	103.3	15 934	5 177	849	1 005	163	99	81	46	−421	−1 136	715
4th qtr	104.2	16 007	4 955	856	1 014	259	260	17	27	−292	−966	674
1977 1st qtr	103.8	15 622	4 821	851	1 030	430	235	82	117	−401	−946	545
2nd qtr	104.5	15 551	5 010	879	1 044	293	97	179	4	−253	−779	526
3rd qtr	105.0	15 876	5 057	910	1 103	−70	−6	−80	−59	513	−3	516
4th qtr	106.5	15 905	5 073	932	1 149	325	116	85	−33	512	−16	528
1978 1st qtr	105.9	16 296	5 151	923	1 162	291	38	81	62	−369	−596	227
2nd qtr	108.4	16 487	5 161	963	1 174	280	272	−62	128	208	−173	381
3rd qtr	109.2	16 858	5 147	982	1 162	302	175	45	54	154	−367	521
4th qtr	108.8	16 756	5 055	988	1 179	89	112	−58	89	450	−39	489
1979 1st qtr		16 944 pe		948	1 214		33 p	76 p	87 p	−787	−1 181	394
% change last 2 qtrs on prev. 2 qtrs.	+1.7	+1.1	−1.1	−0.5	+2.4							
on a year earlier	+3.1	+4.7	+0.7	+4.4	+3.5							

	Industrial production		Personal expenditure		Prices and earnings					Labour (UK)			Visible trade (volume)	
	Total all industries	Total manufacturing industries	Retail sales	Cars: new registrations	Retail prices		Wholesale prices: all manufacturing industry		Average gross earnings of all employees (GB, all industries and services covered)	Unemployed excluding school leavers and adult students		Unfilled vacancies for adults	Export	Import
				monthly averages		% increase on a year earlier	basic materials and fuel used	manufactured products: home sales		mid-month count	% of total employees	mid-month count	On a balance of payment basis	
	at 1975 prices		at 1971 prices		(not seasonally adjusted)				(old series)				at 1975 prices	
Base of index	1975	1975	1971		Jan. 1974		1975	1975	Jan. 1970				1975	1975
£m in base year			16,296										19,463	22,699
Series in				thousands						thousands		thousands		
1973	109.5	108.3	110.3	137.1	93.5	9.1	58.8	66.7	152.1	611.0	2.6	307.0	97.7	108.8
1974	105.1	106.5	109.0	102.8	108.5	16.0	86.8	81.8	179.1	599.7[a]	2.6[a]	301.6[a]	104.2	109.7
1975	100.0	100.0	106.7	97.2	134.8	24.2	100.0	100.0	226.6	929.1	3.9	148.0[a]	100.0	100.0
1976	102.0	101.4	106.5	104.7	157.1	16.5	127.0	117.3	261.8	1 269.3[a]	5.3[a]	119.7[a]	109.7	105.6
1977	105.8	102.8	103.6	107.1	182.0	15.8	145.6	140.5	288.5	1 378.0	5.7	155.8[a]	118.9	107.2
1978	109.8	103.6	109.2	130.1	197.1	8.3	144.6	153.3	330.2	1 376.5	5.7	210.4	122.9	112.6
1977 1st qtr	105.6	103.9	103.3	102	174.1	16.5	144.8	133.0	280.2	1 333.3	5.5	..	115.9	108.8
2nd qtr	105.5	102.4	102.4	104	181.9	17.4	148.8	139.6	284.4	1 353.4	5.6	154.3	117.7	110.6
3rd qtr	106.2	103.0	104.2	110	184.7	16.5	146.5	143.8	289.1	1 403.1	5.8	153.7	124.6	107.3
4th qtr	105.8	101.8	104.7	113	187.4	13.1	142.2	145.8	300.3	1 422.2	5.9	163.6	117.3	102.3
1978 1st qtr	107.0	102.3	106.4	128	190.6	9.5	140.2	149.2	310.9	1 415.7	5.9	185.9	119.6	113.5
2nd qtr	110.7	104.5	107.9	133	195.8	7.7	146.3	151.8	327.8	1 388.6	5.7	206.3	122.2	109.7
3rd qtr	111.5	105.2	110.7	133	199.2	7.8	144.9	154.8	335.7	1 367.9	5.7	215.2	124.8	114.9
4th qtr	110.0	102.6	111.7	127	202.6	8.1	147.1	157.3	346.4	1 333.7	5.5	234.2	124.8	112.3
1979 1st qtr	108.9	101.4	110.3	131	208.9	9.6	152.2	161.6	356.1 p	1 356.7	5.6	232.6	110.3	113.3
1978 Apr	111.0	105.1	106.9	130	194.6	7.9	145.1	150.9	324.1	1 403.0	5.8	199.8	124.3	104.8
May	110.0	103.5	108.2	127	195.7	7.7	146.8	151.9	326.2	1 384.8	5.7	205.6	120.5	113.3
Jun	111.1	104.9	108.6	142	197.2	7.4	147.0	152.7	333.0	1 378.1	5.7	213.4	121.9	111.1
Jul	111.6	105.1	111.0	111	198.1	7.8	145.8	153.8	333.2	1 370.2	5.7	211.1	125.7	114.3
Aug	112.1	106.0	111.7	142	199.4	8.0	144.2	154.8	334.7	1 373.4	5.7	211.8	124.5	111.3
Sep	110.8	104.4	109.6	144	200.2	7.8	144.8	155.7	339.2	1 360.2	5.6	222.8	124.3	119.1
Oct	108.8	101.7	110.2	133	201.1	7.8	145.7	156.6	344.5	1 349.9	5.6	231.8	125.9	110.8
Nov	109.8	102.5	110.5	126	202.5	8.1	147.3	157.1	344.5	1 331.7	5.5	234.9	122.5	113.7
Dec	111.5	103.7	113.8	121	204.2	8.4	148.3	158.3	350.1	1 319.6	5.5	235.9	126.0	112.5
1979 Jan	103.4	93.4	109.6	121	207.2	9.3	150.8	160.0	344.7	1 342.1	5.6	235.7	113.0	107.1
Feb	110.7	103.5	110.4	117	208.9	9.6	152.2	161.7	355.6	1 366.5	5.7	228.9	100.7	117.0
Mar	112.5	107.3	110.8	156	210.6	9.8	153.5	163.2	368.0 p	1 361.5	5.6	233.1	117.3	115.7
Apr	115.0 p	106.8 p	115.4	158	214.2	10.1	158.3 p	165.3 p		1 327.4	5.5	245.3	128.4	127.2
May			113½p		215.9	10.3	160.7 p	167.2 p		1 306.4	5.4	257.3		
% change latest 3 months														
on prev. 3 months	+4.1	+6.0	+1.3	+17.1	+3.3		+4.7	+3.3	+2.8	−0.8		+5.0	−4	+8
on a year earlier	4.0	+2.6	+5.2	+8.8	+10.1		+8.9	+9.5	+14.5	−4.8		+23.1	−7	+8

p Provisional. .e Estimate. pe Second preliminary estimate. [1] Including figures published on or before 18 June 1979. [a] Average of available months.

Inquiries: 01-215 3453

Wholesale price indices in May

Output prices

The price index for the home sales of manufactured products increased by 1¼ per cent between April and May to 167.2 (1975 = 100).

The index for manufactured products other than food, drink and tobacco rose by 1¼ per cent between April and May to 166.4. Higher prices for the home sales of the printing and publishing industries and, to a lesser extent, the vehicles industry accounted for about half of the increase. The index rose 4 per cent over the latest three months.

Among the individual sector indices the largest monthly increase was in vehicles (2 per cent); the smallest increases were in the steel industries and instrument engineering which both recorded a ¼ per cent increase.

Higher prices for passenger cars and, to a lesser extent, commercial vehicles accounted for almost all of the 2 per cent increase in the index for the vehicles industry.

Higher prices for fibreboard packing cases and paper sacks made the most significant contributions to the 1¾ per cent increase in the index for the paper industries. This index rose by 5¼ per cent over the latest three months.

Almost half of the 1½ per cent increase in the index for the bricks, cement, etc, industries arose from higher prices for pre-cast concrete goods.

Higher prices for synthetic resins and plastics made the most significant contribution to the 1¼ per cent increase in the index for the chemicals and allied industries. This index rose by 6 per cent in the latest three months.

About half of the 1 per cent increase in the index for the clothing and footwear industries

More about wholesale price indices

General inquiries and tables 1, 1a and 2 **01-215 3073** **01-215 3544**

Table 3

SIC Orders

II-VI and XII **01-215 5216**

VII-IX and XVI **01-215 3549**

XI, XIII-XV and XVII-XIX **01-215 3548**

Tables 4 and 5 **01-215 3173**

Correspondence: Departments of Industry and Trade, Economics and Statistics Division 4, Room 249, Sanctuary Buildings, Great Smith Street, London SW1P 3DB.

Table 1 Price index numbers of materials and fuel purchased

1975 = 100

1968 SIC Orders or MLH numbers		1978 1st qtr	1978 2nd qtr	1978 3rd qtr	1978 4th qtr	1979 1st qtr	1978 May	1978 Oct	1978 Nov	1978 Dec	1979 Jan	1979 Feb	1979 Mar	1979 Apr p	1979 May p
Orders III to XIX	Materials and fuel purchased by manufacturing industry:	140.2	146.3	144.9	147.1	152.2	146.8	145.7	147.3	148.3	150.8	152.2	153.5	158.3	160.7
	Materials [1]	139.5	145.5	143.8	146.2	151.7	146.0	144.7	146.5	147.5	150.3	151.8	152.9	157.5	159.8
	Coal (except for carbonising), gas and electricity	145.5	152.9	152.8	153.0	154.1	152.8	153.0	153.0	153.1	153.1	153.0	156.2	162.6	165.4
Orders IV to XIX	Materials and fuel purchased by manufacturing industry, other than food, drink and tobacco manufacturing industries	134.2	141.5	139.2	140.9	146.6	142.3	139.8	141.5	141.3	144.6	146.9	148.4	155.2	157.7
	Materials [1]	132.1	139.3	136.6	138.6	145.1	140.2	137.3	139.3	139.1	142.9	145.7	146.8	153.6	156.2
Order III	Materials and fuel purchased by the food, drink and tobacco manufacturing industries	151.1	155.2	156.4	159.1	163.0	155.4	157.5	158.6	161.2	162.6	162.6	163.7	165.0	167.0
	Materials and fuels purchased by selected broad sectors of industry														
211 to 229	Food manufacturing industries	153.7	157.0	157.2	160.8	164.2	157.0	159.0	160.3	163.1	164.4	163.7	164.6	165.8	167.6
	Materials	153.7	157.0	157.3	161.0	164.5	157.0	159.1	160.5	163.4	164.7	163.9	164.8	165.8	167.6
	Fuel [2]	152.1	155.9	155.9	156.0	158.4	155.9	156.0	156.0	156.1	156.1	158.4	160.7	166.1	167.7
211 to 229 (excluding MLH 219)	Food manufacturing industries (excluding animal and poultry foods)	153.8	156.2	157.5	161.1	164.0	156.4	159.4	160.6	163.4	164.5	163.5	164.1	165.4	167.2
Order V	Chemicals and allied industries	149.0	153.4	153.2	155.3	161.3	153.5	155.0	155.1	155.7	157.8	162.0	164.0	166.2	168.7
311 and 312	Steel industries	141.2	145.7	146.7	148.8	153.3 p	145.9	148.3	148.7	149.4	150.7	152.4	156.8 p	158.5	159.9
321 to 323	Non-ferrous metals industry	135.5	142.3	146.7	155.6	171.4	142.5	155.0	155.2	156.6	161.5	173.7	179.1	179.4	177.7
Order VII (excluding MLH 342)	Mechanical engineering industries	148.1	152.5	155.8	159.3	162.9	152.5	158.5	159.5	160.0	161.1	163.2	164.4	167.1	168.2
Order IX	Electrical engineering industries	143.4	148.3	151.2	155.2	163.5	148.4	154.4	154.9	156.2	159.2	164.0	167.3	169.7	170.4
Order X	Shipbuilding and marine engineering industries	143.9	148.4	151.3	154.5	158.7	148.5	153.5	154.6	155.3	157.3	158.8	160.0	162.4	163.6
Order XII	Metal goods industries	147.8	152.6	155.5	159.1	163.9	152.8	158.3	159.2	159.7	161.3	164.3	166.0	168.5	170.4
Order XIII	Textile industries	140.8	145.4	146.1	149.6	154.3	145.6	148.3	149.5	150.9	152.1	154.2	156.6	159.2	161.3
Order XV	Clothing and footwear industries	139.5	142.3	144.9	148.4	154.0	142.4	147.7	148.0	149.4	152.4	153.0	156.5	159.2	161.6
461, 464 and 469	Bricks, cement etc, industries	148.6	152.9	154.5	157.2	163.1	153.1	156.3	157.4	158.0	160.3	163.0	166.0	168.8	171.5
462 and 463	Pottery and glass industries	155.3	158.6	160.2	163.3	167.2	158.9	162.9	163.2	163.7	165.2	167.4	168.9	173.0	175.5
Order XVII	Timber industries	146.1	147.0	150.7	153.4	159.0	146.7	152.6	153.4	154.2	156.3	158.6	162.2	165.7	167.9
481 to 484	Paper industries	117.5	120.6	120.2	124.8	129.6	121.0	123.9	125.6	125.0	128.8	129.6	130.3	133.6	134.7
Order XX	Construction materials	153.0	156.6	159.7	162.9	168.7	156.6	161.9	163.0	163.8	166.4	168.4	171.3	174.0	176.9
Part of Order XX	House building materials	152.5	156.2	159.8	163.0	168.6	156.0	161.8	163.0	164.1	166.4	168.4	170.9	173.9	176.8

[1] Includes crude oil and coal for carbonising. [2] Includes petroleum products. p Provisional.

Table 1a Price index numbers of materials and fuel purchased by selected sectors of industry

1975 = 100

1968 SIC		1979 1st qtr	1979 2nd qtr	1979 3rd qtr	1979 4th qtr	1979 1st qtr	1978 May	1978 Oct	1978 Nov	1978 Dec	1979 Jan	1979 Feb	1979 Mar	1979 Apr p	1979 May p
361	Electrical machinery industry	145.5	149.4	152.5	155.6	161.8	149.3	154.7	155.6	156.6	159.4	162.0	164.0	166.7	167.4
362	Insulated wires and cables industry	136.2	142.8	145.3	149.7	164.2	142.8	148.6	149.0	151.6	156.2	164.9	171.5	174.1	173.6
364	Radio and electronic components industry	144.8	148.5	151.5	155.3	161.4	148.5	154.9	155.3	155.8	158.5	161.8	164.0	166.9	168.9
368	Domestic appliances industry	149.1	152.1	155.4	158.6	162.8	152.2	157.8	158.7	159.2	160.9	162.9	164.5	166.9	168.6
369	Electrical goods i dustries n.e.s.	145.9	149.7	153.0	157.3	163.7	149.7	156.4	157.3	158.1	160.7	164.0	166.4	169.0	170.3
381	Motor vehicle industry	148.4	152.6	156.1	159.1	163.1	152.7	158.2	159.3	159.7	161.0	163.5	164.8	167.0	168.0
411	Man-made fibres industry	134.1	137.1	137.4	140.8	146.5	137.0	140.4	140.8	141.1	144.2	146.1	149.1	154.5	156.8
414	Woollen and worsted industry	139.2	150.5	154.3	158.0	165.9	151.5	153.0	157.9	163.2	163.7	166.3	167.6	166.6	164.8
422/1	Household textiles and handkerchiefs industry	140.9	143.7	146.5	149.6	153.3	143.7	148.8	149.6	150.3	151.8	153.0	155.0	158.0	159.9
450	Footwear industry	136.5	139.3	142.2	148.9	158.2	139.5	147.6	148.2	150.9	155.3	156.2	163.2	165.5	168.9
481	Paper and board making industry	115.2	118.5	118.0	123.1	127.3	119.0	122.1	123.9	123.2	127.0	127.4	127.5	130.5	131.5

p Provisional.

was accounted for by higher prices for boots and shoes with uppers wholly or mainly of leather.

Price rises spread over a number of items were responsible for the ¾ per cent increase in the indices for mechanical engineering, electrical engineering and the textiles industry.

About half of the ¾ per cent increase in the index for the timber industries was accounted for by higher prices for homegrown softwood.

Higher prices for domestic pottery were responsible for most of the ½ per cent increase in the index for the pottery and glass industries. Over the latest three months this sector had the smallest increase (¾ per cent).

The index for the food manufacturing industries increased by 1¼ per cent between April and May to 174.3, mainly as a result of higher prices for chocolate and sugar confectionery, meat and fish products and bread. This index rose by 2½ per cent over the latest three months.

The change in the index for all manufactured products measured over a 12-month period rose again, from 9½ per cent for April to 10 per cent for May. The increase in the index over the latest six months rose from 5½ to 6½ per cent.

Notes on wholesale price indices

1 Detailed notes on index numbers of wholesale prices were last shown in *Trade and Industry*, 27 April 1979.

2 The index numbers are constructed on a net sector basis. This is to say, the price movements used to compile the index for a particular sector of industry are only those relating to transactions between the sector and other sectors. Transactions between undertakings in the same sector are exluded. Thus index numbers for the whole of manufacturing industry are not weighted averages of sector index numbers.

3 All the index numbers are compiled exclusive of value added tax and (before its abolition) of purchase tax. Revenue duties (on cigarettes and manufactured tobacco, alcoholic liquor, matches and mechanical lighters) are included. The duty on hydrocarbon oils is excluded from output price series that cover these products (unless specifically noted to the contrary) but is included in series for materials and fuel purchased by sectors of industry.

4 Indices for the latest two months are always provisional at all levels of aggregation because of the degree of imputation present for items for which the latest prices are not available. In the main the degree of imputation for earlier months has reduced sufficiently to allow the indices to be declared firm. Where imputation remains high however, provisional indices are published for periods longer than two months.

5 Even firm indices can contain some imputation and occasionally information is received which could produce a change in the value of an index which has already been published as firm. Only if the change is significant will it be made. Where such a change is made for an index which is no longer appearing in the table the revised index or indices are shown in a supplementary table immediately after the table in question.

6 The monthly indices relate to the average prices for the month. Where a price change occurs on any day other than the first of the month the full effect of the price change will only be reflected in the index for the following month.

7 Where extension of indices on base 1970 = 100 is required for contract purposes the multiplication factors and explanatory notes are shown in *Trade and Industry*, 15 December 1978.

Input prices

The price index for materials and fuel purchased by manufacturing industry increased by 1½ per cent between April and May to 160.7 (1975 = 100). The change in this index measured over a 12-month period was 9½ per cent for May, compared with 9 per cent for the revised April level. This increase has however been concentrated in the last six months with a 9 per cent increase since November.

Higher prices for gas and electricity were responsible for the 1¾ per cent increase between April and May in the index for coal, gas and electricity. This index has risen 8 per cent over the latest three-month period after remaining at a virtually constant level for the preceding nine months.

The index for materials purchased by manufacturing industry other than food, drink and tobacco industries rose 1¾ per cent between April and May to 156.2. Further higher prices for crude oil, partly the result of a slight depreciation in sterling's value against the dollar, made the most significant contribution. Prices for materials other than crude oil rose by 1 per cent; lower prices for copper and, to a lesser extent, hides and skins were offset by higher prices for several commodities, especially gold, nickel and lead.

Among the individual industry sectors the highest monthly increase occurred in construction materials and housebuilding materials which both increased by 1¾ per cent. There were a number of items contributing to this increase, including pre-cast concrete referred to in the output prices section.

Higher prices for gold and, to a lesser extent,

continued on page 556

Table 2 Price index numbers of output (home sales)

1975 = 100

1968 SIC Orders or MLH numbers		1978				1979	1978				1979				
		1st qtr	2nd qtr	3rd qtr	4th qtr	1st qtr	May	Oct	Nov	Dec	Jan	Feb	Mar	Apr p	May p
Orders III to XIX	Output of manufactured products	149.2	151.8	154.8	157.3	161.6	151.9	156.6	157.1	158.3	160.0	161.7	163.2	165.3	167.2
Orders IV to XIX	Products of manufacturing industries other than food, drink and tobacco manufacturing industries	146.6	149.4	152.3	155.2	160.0	149.5	154.5	155.2	156.0	158.1	160.1	161.9	164.4	166.4
	Output of selected broad sectors of industry														
211 to 229	Food manufacturing industries	157.2	160.1	163.7	165.7	169.8	160.2	164.7	164.9	167.6	168.9	170.0	170.5	172.1	174.3
211 to 229 (excluding MLH 219)	Food manufacturing industries (excluding animal and poultry foods)	159.2	162.1	165.3	167.7	171.3	162.2	166.7	166.7	169.6	170.7	171.4	171.9	173.2	175.5
Order V	Chemicals and allied industries	141.2	142.8	144.2	146.7	152.1	142.8	145.8	146.9	147.5	149.9	151.9	154.5	158.8	160.9
Order VI	Metal manufacturing	149.8	152.7	156.6	160.4	166.2	152.7	159.2	160.5	161.5	163.1	166.2	169.3	172.6	173.7
311 and 312	Steel industries	150.6	152.8	156.6	158.7	160.8	152.8	157.8	158.9	159.3	159.7	160.9	161.8	165.0	165.4
Orders VII to XII	Engineering and allied industries	147.5	151.0	154.8	158.4	163.4 p	151.0	157.2	158.1	159.8	162.3	163.4	164.5 p	166.7	168.4
Order VII (excluding MLH 342)	Mechanical engineering	147.7	150.7	154.4	158.2	163.6 p	150.9	157.0	157.8	159.7	162.5	163.7	164.6 p	167.4	168.6
Order VIII	Instrument engineering	145.8	147.2	149.4	152.7	158.6	147.2	151.8	152.1	154.3	157.1	159.2	159.4	160.6	161.1
Order IX	Electrical engineering	139.4	142.9	145.2	148.7	152.4 p	142.9	147.7	148.8	149.6	151.3	152.1	153.8 p	155.9	157.0
Order XI (excluding MLH 383)	Vehicles	157.0	160.0	165.5	168.6	174.0	159.6	166.6	168.3	170.9	173.4	174.1	174.6	175.7	179.2
Order XII	Metal goods industries n.e.s.	150.5	155.6	159.9	164.2	169.6	155.8	163.6	164.1	164.8	167.3	169.8	171.7	174.1	175.0
Order XIII	Textile industries	143.0	145.5	148.9	151.3	155.8	145.5	150.8	151.2	151.8	154.4	155.8	157.3	159.0	160.3
Order XV	Clothing and footwear	138.4	140.8	144.3	147.9	152.2	141.1'	147.2	148.1	148.5	151.5	152.2	152.8	154.3	156.0
441 to 445 and 449	Made-up clothing	137.0	139.3	142.9	146.6	150.4	139.4	145.9	146.8	147.2	149.7	150.5	151.0	152.4	153.3
461, 464 and 469	Bricks, cement etc, industries	160.1	166.2	170.3	173.3	179.3	165.8	172.9	173.1	173.8	177.1	179.2	181.6	184.3	187.0
462 and 463	Pottery and glass industries	151.9	155.4	158.3	163.7	166.0	155.1	163.5	163.9	163.7	165.1	166.4	166.8	166.9	167.8
Order XVII	Timber industries	144.4	145.8	148.9	151.3	156.9	145.8	150.4	151.4	152.2	154.7	157.2	158.7	160.4	161.6
481 to 484	Paper industries	132.4	133.5	134.5	138.2	142.0	133.6	137.5	138.0	139.0	141.1	141.6	143.2	146.7	149.2

p Provisional

Table 3 Commodities produced in the United Kingdom (home sales)

1975 = 100

1968 SIC order or MLH and industry	1978 May	1979 Feb	Mar	Apr p	May p
II Mining and quarrying					
101 **Coal**	151.9	154.7	168.6	168.6	168.6
102 **Stone and slate quarrying and mining**	170.6	180.8	183.1	183.4	192.0
Stone quarrying and mining					
Limestone and dolomite	178.9	190.2	192.7	192.9	201.2
Uncoated limestone roadstone and aggregates	165.4	176.2	176.6	177.0	184.6
Coated limestone roadstone	172.8	180.3	187.0	187.2	199.3
Granite	155.9	162.4	164.3	164.7	174.3
Granite and other chippings, aggregates and roadstone	153.2	159.8	159.6	160.3	171.5
Granite and other chippings	151.3	158.3	157.9	158.9	166.2
Coated granite and whinstone roadstone	159.5	164.2	167.4	167.6	176.1
Slate quarrying and mining					
Roofing slates	186.6	225.2	228.6	228.6	228.6
103 **Chalk, clay, sand and gravel extraction**	173.9	194.8	197.3	198.0	201.8
Sand and gravel (uncoated)	202.1	225.7	230.4	231.8	234.4
Sand and gravel (ex-pit or works)	203.3	225.7	232.2	234.3	236.7
Sand and gravel (delivered)	179.1	199.3	205.1	207.2	207.3
Clay, brick, earth, marl and shale					
China clay	141.4	159.1	159.1	159.1	164.3
109 **Other mining and quarrying**	173.2	182.6	191.4	191.1	193.6
109/3 **Salt**	189.4	198.9	215.3	214.7	214.7
III Food, drink and tobacco					
231 **Brewing and malting**	148.9	152.6	155.9	156.8	157.3
240 **Tobacco**	156.0	161.4	161.4	161.4	161.4
IV Coal and petroleum products					
261 **Coke ovens and manufactured fuel**					
Foundry coke	152.5	152.5	166.1	166.1	166.1
262 **Mineral oil refining**					
Motor spirit (including duty) [1]	130.9	133.8	135.6	140.4	140.4
Gas/diesel oil (including duty) [1]	166.0	172.4	176.3	183.7	183.7
Gas oil fuel (including duty) [1]	168.6	175.8	180.5	189.0	189.0
Derv (including duty) [1]	160.3	163.9	166.0	170.7	170.7
Medium fuel oil (950 seconds including duty) [1]	169.5	174.1	177.1	179.1	179.1
V Chemicals and allied industries					
271 **General chemicals**	144.1	156.9	160.7p	170.9	173.2
271/1 **Inorganic chemicals**	153.5	162.0	162.5	166.8	168.7
Inorganic acids and oxygen compounds of non-metals	132.5	139.5	140.4	141.5	143.1
Metallic oxides, hydroxides, peroxides and other inorganic bases	154.4	163.7	164.5	170.0	172.7
Metallic salts and peroxy salts of inorganic acids	154.8	163.0	163.9	172.1	173.8
Soda ash	170.3	177.5	177.5	188.9	191.8
Metallic salts and peroxy salts of inorganic acids-other than soda ash	150.6	159.2	160.3	167.6	169.0
271/2 **Organic chemicals**	137.0	156.2	161.4p	175.7	178.5
Hydrocarbons other than products of coal tar etc	125.6	165.0	168.6	190.2	193.0
Halogenated, sulphonated, nitrated or nitrosated derivatives of hydrocarbons	152.6	161.8	164.6	166.6	169.1
Alcohols, phenols and pheno-alcohols	128.1	146.5	152.1	176.5	179.9
Nitrogen function compounds	139.2	139.8	151.4	155.0	159.6
271/3 **Other chemicals**					
Bleaching materials	176.3	192.2	194.2	205.5	206.1
Plasticisers, mixed or unmixed	127.8	136.8	147.3	164.8	172.2
272 **Pharmaceutical chemicals and preparations**					
Pharamaceutical chemicals —central nervous system	170.0	178.3	179.2	181.1	183.0
Pharmaceutical preparations	152.6	161.6	162.1	162.6	164.9
—central nervous system	171.7	185.5	185.7	186.9	190.4
Anaesthetics	143.7	146.0	146.0	146.0	146.0
Analgesics	164.5	177.3	177.5	179.9	186.2
Psycho analeptics	177.3	182.3	182.3	182.3	182.3
—cardiovascular system	169.5	175.0	175.0	175.0	176.0
Plain hypotensives	170.7	171.2	171.2	171.2	171.2
—respiratory system	177.7	183.2	183.5	186.1	186.1
Cough and cold preparations	176.4	188.6	189.0	194.9	194.9
—alimentary tract and nutrition	138.3	152.9	155.4	156.2	158.1
—dermatologicals	151.5	154.6	154.6	154.6	155.6
—general anti-infectives					
Antibiotics	127.0	128.6	128.6	128.6	133.0
Penicillins	150.6	154.9	154.9	154.9	163.8
273 **Toilet preparations**	144.9	159.1p	158.9p	159.1	160.9
—specifically for men	145.0	157.7	157.7p	158.6	160.5
After-shave, cologne and pre-shave lotions in alcoholic lotion form	161.0	176.4	176.4	178.4	180.2
—other than specifically for men	144.9	159.2p	159.1p	159.2	160.9
Hair preparations (excl. shampoos)					
Talc and dusting powders and bath preparations	146.8	170.8	170.8	170.8	173.3
Talc and dusting powders	149.8	165.0	166.3	166.8	166.8
Bath oils, cream and liquid essences	134.1	153.8	153.8	153.8	153.8
Make-up preparations	144.9	156.0p	156.1p	156.1	157.1
Lipsticks and lip glosses inc. lipsalve	143.6	152.8	154.3	154.3	154.3
Face powders	144.6	164.0	165.3	165.3	165.3
Liquid and cream facial make-up preparations	150.3	163.5	166.4	166.4	166.4
Eye shadow and mascara	150.5	162.0	162.0	162.0	162.0
Nail preparations	131.1	140.4	140.3	140.3	140.3
Creams and lotions	136.1	146.7	147.7	147.7	148.0
Facial beauty care preparations	135.3	143.0	143.3	143.3	143.6
Cleansing creams, cold creams, lotions and milks, moisturisers, nourishing and night creams	132.0	140.9	141.3	141.3	141.6
General creams and lotions					
Hand creams, lotions and gels	157.2	168.3	171.7	172.1	172.7
Deodorants, anti-perspirants and depilatories	133.7	141.9	141.9	141.9	143.5
Dental toothpaste and powder	145.5	154.7	154.9	155.1	156.6
Soapless shampoos	156.4	175.1	175.1	175.1	177.8
274 **Paint**	140.9	148.7	149.8	153.6	155.0
Air drying and stoving finishers, undercoats, primers, surfacers and sealers, varnishes and lacquers					
Building structural and preservative products	141.0	148.5	148.5	152.0	153.6
Emulsion paints	138.5	145.7	145.7	149.3	150.7
Filling and sealing compounds of all types	134.5	147.3	147.5	147.6	148.8
275 **Soap and detergents**	135.2	142.1p	142.6p	143.5	145.9
Fatty acids	145.3	143.3	149.8	153.3	152.0
Soap (excluding scouring preparations)	130.8	137.3p	136.2p	136.2	139.0
Toilet soap in tablet form	128.3	134.6	134.9	134.9	136.2
Finished synthetic detergents compounded materials primarily for washing purposes	133.0	142.1	142.2	143.3	145.3
276 **Synthetic resins and plastics materials and synthetic rubber**	141.1	147.2	153.8p	161.8	165.1
276/1 **Synthetic resins and plastics materials**	140.9	146.7	153.7p	162.7	166.3
Products of condensation, polycondensation and polyaddition	141.9	149.4	152.9	161.4	164.0
Products of polymerisation and copolymerisation	138.2	142.4	151.1	162.4	166.2
Acrylics	129.0	131.4	134.7	141.6	144.1
Polyethylene granules, compounds and powders	134.6	140.7	155.7	159.7	163.6
Styrene polymers and copolymers	133.0	140.4	148.9	176.0	184.2
Cellulosics and other plastics and modified natural resins	132.9	145.2	145.2p	146.4	147.4
Intermediate forms between the resin and semi-fabricated stages	146.9	148.4	159.7	179.8	182.4
Semi-finished products	145.1	153.4	159.1p	161.5	166.8
Polyvinyl chlorides	156.3	158.6	168.0	172.9	175.4
277 **Dyestuffs and pigments**	153.1	165.3p	167.4p	171.0	174.1
Pigments	152.8	165.9p	168.5p	173.1	174.3
White lead [2]	148.9	225.0	236.1	232.3	243.5
278 **Fertilisers**	139.6	145.6	145.6	145.6	145.6
279 **Other chemical industries**	143.1	155.3p	156.5p	158.4	160.2
Explosives fireworks etc	152.5	164.1	164.1	167.9	170.3
279/4 **Formulated pesticides**	143.5	153.1p	153.5p	155.2	156.1
Disinfectants	137.8	148.5	148.8	149,9	151.9
Pesticides	156.0	164.6	165.2	165.7	166.0
Insecticides (other than seed dressings)	158.3	167.0	166.9	166.9	166.9
Containing organophosphorous compounds	130.8	126.9	126.9	126.9	126.9
Preparations for plant control					
Herbicides	139.1	146.4	146.5	148.7	149.4
279/6 **Surgical bandages, etc**	141.3	154.4	155.0	156.1	160.0
Surgical and medicated dressings	144.7	159.3	160.1	161.2	165.0
Disposable sanitary goods					
Sanitary towels and tampons	138.2	150.0	150.4	151.4	155.4
279/7 **Photographic chemical materials**	144.3	151.5	152.4	153.8	156.0
VI Metal manufacture					
311/2 **Steel**	152.7	159.1	159.9p	163.4	164.2
Non-alloy steels	151.9	158.2	158.8p	161.7	162.4
Ingots, blooms, billets, slabs	160.7	165.0	165.0	178.6	180.4
Heavy rails, sleepers and fishplates, etc	148.6	160.1	160.1	160.1	160.1
Heavy rolled products, 80 mm and over	161.0	163.4	163.4	163.9	163.9
Angles, tees and other sections	156.6	160.2	160.2	160.7	160.7
Girders, beams, joists, columns	163.0	164.6	164.6	165.1	165.1
Rods and bars in coils	143.8	151.4	151.4	161.7	163.7
Steel strip (non-alloy)	147.0	158.1	158.1	159.6	161.6
Hot rolled strip (under 600 mm wide)	145.0	156.3	156.3	156.6	156.6
Plates in coils and cut lengths	132.1	134.4	134.4	134.5	134.5
Steel sheet (under 3 mm thick)	154.5	162.1	162.1	162.5	162.5
Uncoated steel sheet	158.7	167.6	167.6	168.1	168.1
Uncoated steel sheet hot rolled	140.4	152.0	152.0	152.4	152.4
Uncoated steel sheet cold reduced	160.6	169.2	169.2	169.6	169.7
Electrical steel sheet	158.7	167.7	167.7	168.0	168.0
Galvanised steel sheet	143.5	147.7	147.7	148.0	148.1
Light sections	143.1	147.0	147.0	147.1	151.8
Tinplate and blackplate	164.2	172.3	172.7	172.7	172.7
Tinplate	164.4	172.4	172.8	172.8	172.8
Blackplate	155.2	162.4	162.4	162.4	162.4
Bright steel bars, non-alloy	159.7	168.6	168.6	181.4	184.1
Forgings (other than drop forgings)	166.2	177.5	177.9p	181.3	181.9
Non-alloy steel castings	160.9	170.8	176.1	182.7	183.1
Stainless and heat resisting alloy steels	148.2	154.5	154.6	157.9	159.7
Sheets (under 3 mm thick)					
Stainless steel sheets	154.7	166.9	166.9	167.0	173.7
Stainless steel castings	153.6	166.4	166.9	174.5	174.5
Alloy steels other than stainless and heat resisting	161.6	169.2	171.0	179.8	181.2
Ingots, blooms, billets, slabs (excluding tube)	172.0	176.8	178.8	193.3	193.7
Bars and rods other than in coil (excluding bright bars)	157.6	162.4	162.9	172.8	173.1
Plates in coils and cut lengths	124.6	138.4	138.4	138.6	138.6
Alloy steel castings	155.1	169.3	170.7	176.2	176.5

Table 3 **Commodities produced in the United Kingdom (home sales)** *continued*

1975 = 100

1968 SIC order or MLH and industry	1978 May	1979 Feb	Mar	Apr p	May p
463/2 **Glass containers and vacuum ware**					
Glass containers	159.9	168.0	168.4	168.4	168.4
non-tubular for all products excl. wines, spirits, beer and cider	161.0	170.6	171.3	171.3	171.3
464 **Cement**					
Calcareous cement (other than clinker) delivered in bulk	161.4	183.0	185.3	187.8	187.8
Cement in bags	162.0	186.1	189.7	192.0	193.0 e
469/1 **Abrasives**	163.1	173.3	175.7	177.0	181.2
Abrasive wheels (disc wheels, segment sharpening stones and other forms of bonded abrasives incl diamond)	164.2	176.9	176.9	177.4	183.4
Coated abrasives – abrasive paper and cloth	161.1	166.5	173.4	176.2	177.0e
469/2 **Miscellaneous building materials and mineral products**	168.6	181.0 p	184.1 p	186.4	189.6
Plasterboards	142.7	148.1	148.1	161.1	161.6 e
Precast concrete goods	160.8	172.2 p	173.7 p	174.4	179.4
Concrete blocks, bricks, kerbs and edgings					
Flagstones	155.8	178.4	180.2	180.2	186.4
Kerbs and edgings	145.4	168.7	169.6	169.7	176.5
Precast concrete building blocks – delivered	162.8	179.3	184.7	184.8	188.9
Precast concrete pipes to BS556 – delivered	173.7	176.5 p	176.5 p	176.5	177.1
Roofing tiles and fittings and concrete/terrazzo floor and wall tiles	152.2	157.4	162.5	166.9	167.1
Asbestos cement goods	195.4	212.1	228.6	230.6	230.6
Bituminous and flax felts	153.5	157.4	168.6	168.6	169.9
Insulating materials for thermal and acoustic purposes n.e.s.	158.6	169.9	174.0	174.2	174.5
Quicklime	184.2	200.4	200.4	203.4	203.4
Limestone dressed, polished, etc	178.3	197.4	200.2	200.2	204.3
Plaster (gypsum)	143.0	147.7	147.7	162.0	162.5
XVII Timber, furniture, etc					
471/1 **Timber, sawmilling etc**					
Homegrown sawn hardwood	160.7	183.6	187.6	187.9	188.6
Hardwood flooring blocks and mosaic flooring	141.3	146.7	147.1	147.6	147.6
471/2 **Builders' woodwork**	152.2	160.6	161.6 p	165.2	165.7
Door sets, leaves and frames and window frames	156.1	160.5	162.1	170.0	170.4
Door leaves	156.3	161.0	164.0	170.8	171.1
Window frames	155.9	159.9	159.9	169.3	169.4
Timber structures and structural components	148.4	160.9	161.2 p	161.5	161.9
472 **Furniture and upholstery**	143.2	156.9	158.4	159.1	159.2
Domestic upholstered furniture	137.9	152.2	153.6	153.6	153.6
Domestic wooden furniture	147.4	161.2	163.1	164.4	164.7
Bedroom furniture, excl. built-in	142.4	154.6	156.2	156.8	156.8
Kitchen furniture (excl. built-in)	147.9	169.9	172.1	172.9	174.8
—other than tables and seating	147.1	167.7	170.4	171.2	173.6
Dining/living room furniture, excluding built-in	150.1	164.1	164.7	165.6	165.6
Seating	146.1	161.1	162.0	162.0	162.0
Occasional furniture for dining/living room	143.2	158.4	160.2	160.2	160.2
473 **Bedding and soft furnishings**					
Fully finished mattresses	154.4	173.3	175.6	175.8	178.0
Bolsters and pillows (covered)	190.8	201.8	203.2	203.2	205.2
XVIII Paper, printing and publishing					
481 **Paper and board**	131.7	138.0	140.5	143.7	144.3
Printing and writing paper and all boards for printing (excl. newsprint)	131.3	137.6	143.0	145.6	145.8
Wrapping paper	120.5	127.6	127.6	135.9	137.2
All tissue stocks	128.2	130.8	130.8	133.6	134.0
Industrial and special purpose paper	127.5	135.8	136.8	138.9	138.9
Packaging boards	141.5	148.0	149.5	152.3	153.9
Industrial and special purpose boards	137.7	140.8	141.2	150.6	150.6
482 **Packaging products of paper, board and associated materials**	133.1	142.6	143.7	148.0	150.8
482/1 **Cardboard boxes, cartons and fibre-board packing cases**	137.2	145.0	146.5	151.1	153.5
Cartons	150.2	157.0	160.7	161.9	162.8
Fibre-board packing cases	126.1	134.4	134.4	142.0	144.5
—Solid	132.7	143.2	143.2	143.3	149.4
—Corrugated	125.6	133.7	133.7	141.9	144.2
482/2 **Miscellaneous packaging products of paper and film**	123.7	136.9	137.3	141.0	144.6
Paper bags	100.8	112.5	113.4	122.4	122.6
Paper sacks	125.6	140.1	140.1	141.8	148.6
483 **Manufactured stationery**	144.3	154.8	155.5	159.0	162.1
Commercial envelopes	133.5	145.4	145.4	145.4	154.2
Business forms	140.4	149.3	150.5	156.8	159.5
Continuous stationery	129.6	139.1	141.3	147.6	148.7
Stationery and scholastic books and ruled paper	154.0	168.1	168.1	174.6	179.2
Loose leaf supplies	142.5	156.1	156.6	156.1	156.4
Filing supplies	136.9	150.0	150.0	151.9	154.7
484 **Manufactures of paper and board not elsewhere specified**	136.3	141.5	145.2	147.1	150.2
484/2 **Miscellaneous manufactures of paper and board**					
Toilet paper	142.0	142.0	148.7	152.8	152.8
Household and sanitary tissue products	137.9	140.7	147.9	149.1	151.1
Handkerchiefs and facial tissues	139.5	139.5	150.3	151.7	151.7
Kitchen rolls and towels	136.0	139.4	146.6	148.5	148.5
XIX Other manufacturing industries					
491 **Rubber manufactures**	151.2	162.9 p	165.6 p	168.2	168.6
491/1 **Tyres and tubes**	147.3	157.1 p	160.6 p	162.8	162.9
New tyre covers	147.2	156.8 p	160.7 p	163.2	163.2
—cross-ply, car and van	149.0	156.1 p	161.9 p	163.3	163.3
—radial ply, car and van	147.6	156.8 p	160.0 p	162.3	162.3
—commercial vehicles	146.6	156.8 p	161.1 p	163.7	163.7
tractors, earthmovers and land/road[1]	145.9	156.5 p	159.3 p	163.9	163.9
491/2 **Other rubber goods**					
Belting (of rubber or plastics)	155.4	168.9	169.1	169.1	174.4
Conveyor and elevator belting	158.4	174.1	174.4	174.4	180.8
Belting other than conveyor and elevator belting					
Transmission belting	147.2	154.9	154.9	154.9	156.8
Miscellaneous rubber products					
Cellular products of rubber	141.5	151.2	156.1	160.6	161.2
492 **Linoleum, plastics floor-covering, leathercloth etc**	135.5	141.4	144.0	144.7	150.9
493 **Brushes and brooms**	147.7	161.6	162.3	163.4	166.2
Decorating brushes and rollers	142.1	158.4	160.7	161.0	161.2
Toilet brushes	155.1	167.1	167.8	168.0	168.2
494 **Toys, games, children's carriages and sports equipment**	149.6	163.6	163.6	164.4	165.6
494/1 **Toys and games**	145.4	162.3	162.3	162.7	163.4
Dolls and soft toys	150.7	167.1	167.1	167.1	167.6
Mechanically self-propelled and die-cast metal toys	146.0	167.8	167.8	167.8	169.4
—mechanical (self-propelled) including train sets	140.9	157.0	157.0	157.0	157.6
—die-cast	146.9	169.6	169.6	169.6	171.3
Indoor table gamés	141.7	157.4	157.4	157.4	157.4
494/3 **Sports equipment**	164.3	171.4	171.4	171.6	173.5 e
495 **Miscellaneous stationers' goods**	139.8	145.3	147.3	147.6	147.7
495/1 **Pens and pencils**	149.5	157.5	158.3	159.2	159.6
Ballpoint pens	153.7	154.7	156.2	158.4	158.4
Fountain pens, stylos and markers	146.3	155.9	156.0	156.0	156.0
Fountain pens with stainless steel nibs	146.9	162.3	163.1	163.1	163.1
496 **Plastics products**					
Building materials of plastics	152.5	163.6	168.5 p	180.0	181.8
Pipes and fittings of plastics	158.2	169.3	176.3	190.1	191.4
Rainwater pipes and fittings of plastics	158.0	168.3	173.5	185.2	187.1
Packaging products and transit containers of plastics	144.2	152.4	159.0	168.0	171.1
Other plastics products					
Haberdashery of plastics (including slide and zip fasteners)	146.4	150.5	156.2	156.8	162.4
499/1 **Musical instruments**					
Pianos	155.5	163.5	163.5	163.5	163.5
Other indices					
312, 361/2, 362, 369/5 Part Electrical installation materials, domestic	142.4	157.4	161.2	163.1	164.3
338, 399/1, 399/3, 472 Part Office equipment and machinery (excluding computers and calculators)	140.3	154.6 p	154.9 p	156.7	156.7
399/1, 472 Part Office furniture	143.1	158.4	158.4 p	162.6	163.5
Special indices [4]					
Granite and limestone roadstone	164.4	173.5	176.3	176.7	187.2
Petroleum products	152.3	157.9	161.9	166.8	166.8
Steel sheets	155.9	164.3	164.3	164.6	165.1
Steel sheet piling	162.6	179.4	179.4	180.1	180.1
Finished stainless steels	142.0	142.1	142.1	143.9	144.8
Finished steels (other than sheets tin-plate, tubes, forgings and castings)	147.7	152.8	153.4	157.1	158.2
Steel castings	158.0	169.6	172.9	179.4	179.7
Semi-finished steels for forgings (other than drop forgings)	168.2	171.6	175.4	189.0	190.2
Malleable iron castings	157.8	170.9	178.2	180.4	180.4
Wrought aluminium	174.4	182.4	183.0	186.6	187.9
Brass ingots	124.3	150.1	155.0	157.2	156.6
Industrial pumps	150.8	160.8	161.1	164.7	166.2 e
Primary and secondary batteries	162.5	179.1	182.9	187.9	190.8
Door sets, leaves and frames	156.2	161.1	164.0	170.7	171.2
Domestic furniture	144.4	158.4	160.1	161.0	161.2
Divan sets	147.2	167.5	168.3	168.3	168.3

[1] Index based on scheduled outer zone prices for minimum bulk loads of 500 gallons (motor spirit 1000 gallons) exclusive of rebate.
[2] Source of price information: trade publications.
[3] Inclusive of VAT and car tax.
[4] These indices are specially constructed outside the normal wholesale price index structure. Their continued publication is a temporary measure to enable extant VOP contracts to be completed.
p Provisional. e Estimates which are subject to possible major revision.

Wholesale price indices: further information

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01-215 3073 General inquiries and **01-215 3544** tables 1, 1a and 2
01-215 5216 table 3 SIC orders II-VI and XII
01-215 3549 table 3 SIC orders VII-IX and XVI
01-215 3548 table 3 SIC orders XI, XIII-XV and XVII-XIX
01-215 3173 tables 4 and 5

Table 3 Commodities produced in the United Kingdom (home sales) *continued*

1975 = 100

1968 SIC order or MLH and industry	1978 May	1979 Feb	1979 Mar	1979 Apr p	1979 May p
Structural steel	146.4	150.6	150.6	151.5	152.1
Steel for reinforcement (cut, bent, and delivered)	151.8	158.9	167.4	171.6	171.6
Light re-rolled bars and sections	145.2	148.9	152.4	156.7	158.4
All types of steel forgings (other than drop forgings)	167.1	176.1	178.3 p	184.3	185.5
312 **Steel tubes**	157.7	165.1	165.1	167.9	169.7
Fittings for steel tubes	147.6	155.0	155.0	155.4	155.4
Steel tubes (other than electric conduit tubes)	160.9	171.9	171.9	173.4	174.2
313 **Iron castings and pig iron**	150.5	166.8	170.4 p	172.5	174.5
313/3 313/4 **Iron castings**	151.3	166.7	170.9 p	173.1	175.5
313/3 **Engineering castings**	149.1	162.8	166.1 p	167.7	169.0
Vehicle iron castings	146.0	162.7	165.1 p	168.0	168.0
Industrial and marine iron castings	151.6	163.0	167.0 p	167.5	169.7
Heavy engineering	150.9	166.4	168.0 p	168.0	168.0
Light engineering and hydraulic	149.4	160.9	166.1 p	166.4	166.7
313/4 **Other iron castings**					
Building and domestic goods	154.6	178.8	186.1	190.8	190.8
Cast and spun iron pipes and fittings	151.3	164.5	166.5	167.4	184.1
321 **Aluminium and aluminium alloys**					
Semi-manufactures (excluding castings and forgings)					
Aluminium plate, sheet, strip, circles and blanks	181.0	185.7	184.0	183.0	183.0
Aluminium extrusions and tubes (bars, rods, sections, etc)	176.8	184.8	183.4	184.4	184.4
Aluminium forgings	171.5	191.5	191.5	191.5	191.5
322 **Copper, brass and other copper alloys**					
Copper					
Copper tubes	145.0	176.2	195.2	196.8	196.8
Copper sheet and strip	138.4	172.5	180.9	181.0	177.0
Brass and other copper alloys					
—unwrought	126.4	157.7	162.2	166.0	165.1
—semi-manufactures	127.1	156.0	162.6	162.6	160.7
323 **Miscellaneous non-ferrous metals**					
Lead and lead alloys					
—semi-manufactures	156.1	250.9	266.6 p	271.2	268.6
Nickel [2]	130.3	107.4	125.7	144.6	178.2
Titanium	155.8	212.0	212.0	212.0	212.0
VII Mechanical engineering					
331 **Agricultural machinery**	163.0	176.8	178.4	179.2	179.5
Soil preparation and cultivation machinery	160.3	171.0	173.7	174.2	174.4
Harvesting, threshing, feed processing etc, machinery	166.4	183.1	183.2	183.3	183.6
Pick-up balers	167.9	179.8	179.8	179.8	179.8
Grinding mills and meal mixers excluding combined mills and mixers)	160.7	174.7	175.6	176.1	176.1
Milking machinery					
Milking machines, including parts	170.4	173.0	184.3	186.1	186.8
Elevators and conveyors (excluding tractor mounted hydraulic loaders)	173.3	185.9	185.9	186.4	186.4
332 **Metal working machine tools**	155.4	169.6	170.4 p	172.5	174.0
332/1 **Metal cutting machine tools**	157.2	170.6	171.2 p	173.8	175.3
332/2 **Metal forming machine tools**	152.3	169.2	170.4 p	171.0	171.5
333 **Pumps, valves, compressors and fluid power equipment**	146.8	159.0 p	159.4 p	161.5	162.6
333/1 **Pumps**	150.5	160.8	161.1	164.5	166.0
Centrifugal pumps	150.4	159.8	160.0	162.6	163.9
Positive displacement pumps	152.3	164.4	164.4	171.5	173.6
Kerbside petrol and oil measuring pumps and parts	144.6	160.2	161.1	161.8	163.2
333/2 **Industrial valves**	139.3	151.0	151.8	154.7	154.5
Valves – ferrous metal	135.8	146.0	146.1	148.7	148.9
Iron valves	150.6	162.9	163.0	166.9	167.6
Steel valves	130.9	140.4	140.5	142.6	142.7
Valves – non-ferrous metal	149.4	165.1	168.0	171.8	170.6
333/3 **Air and gas compressors**	155.8	167.9	168.7	168.8	172.2
333/4 **Fluid power equipment**	148.5	163.1 p	163.2 p	163.8	165.0
Oil/hydraulic fluid power equipment	150.1	166.4 p	166.6 p	167.6	168.7
Pneumatic control fluid power equipment	145.7	157.0	157.0	157.0	158.3
334 **Industrial engines**	167.7	182.4	183.3	185.4	183.5
Diesel compression internal combustion engines	167.8	183.2	184.1	186.4	184.3
336 **Construction and earth-moving equipment**	166.3	178.7	179.5 p	182.5	184.4
Excavators, trenchers, ditchers and digging machinery including parts	177.1	187.1	189.7	193.4	199.5 e
Wheeled tractor shovels, crawler tractors, dumpers and other earth-moving equipment	164.1	178.8	178.8	180.0	180.1
Dumpers and dump trucks	152.2	164.1	164.1	166.8	166.8
Concrete mixing and placing machinery	154.7	168.0	169.4	169.4	170.1
Crushing, pulverising and screening plant, including parts	155.5	169.2	169.2	172.9	173.6
337 **Mechanical handling equipment**	152.0	164.9 p	165.2 p	167.6	168.6
337/2 **Cranes and transporters**	151.1	166.1	166.1	168.5	168.7
337/4 **Lifting and winding devices**	150.6	163.3	163.3	166.5	173.1
337/5 **Powered industrial trucks and tractors**	161.4	174.0 p	174.2 p	175.3	175.5
339/1 **Mining machinery**	145.6	156.6 p	156.9 p	161.7	163.6
339/3 **Refrigerating machinery**	161.4	174.9	175.9	177.8	178.1
339/5 **Scales and weighing machinery (excluding precision balances)**	145.2	169.1	169.1	169.4	169.4
339/6 **Portable power tools**	147.3	158.9	160.0	161.6	161.9 e
Portable power tools, non-electric – pneumatic					
—for civil engineering, mining and quarrying	156.5	172.1	172.8	172.8	173.9
—for general engineering	150.6	167.9	172.6	178.2	178.2
Portable power tools, electric	144.0	152.2	152.3	153.0	153.2 e
—power drills	150.9	157.1	157.1	157.4	157.4 e
339/7 **Food and drink processing machinery**	149.8	168.9	169.2	170.5	170.5
339/9 **Miscellaneous (non-electrical) machinery**	155.7	170.4 p	171.2 p	173.1	174.2
VIII Instrument engineering					
352 **Clocks, watches and time recorders**	151.8	165.4 p	165.4	165.6	166.1 e
Clocks	156.1	170.9	170.9	170.9	171.2 e
354 **Scientific and industrial instruments and systems**	144.5	156.1 p	156.1 p	157.7	158.3
354/2 **Other scientific and industrial instruments and systems (non-optical)**	143.8	156.7 p	156.8 p	158.8	159.5
Analytical instruments					
Spectrophotometers and absorbiometers	133.9	143.2 p	143.6 p	144.9	146.4
Electrical measuring, testing and controlling instruments and apparatus	141.8	149.9 p	149.9 p	153.2	153.3
IX Electrical engineering					
365 **Broadcast receiving and sound reproducing equipment**	128.1	134.4 p	134.5 p	134.9	135.0
365/1 **Gramophone records and pre-recorded tapes**	142.2	161.4	161.4	161.6	161.6
Gramophone records	143.7	163.7	163.7	163.9	163.9
—33⅓ rpm	144.9	164.7	164.7	164.7	164.7
—45 rpm	138.6	159.1	159.1	160.3	160.3
Pre-recorded tapes (other than video)	134.8	150.3	150.3	150.3	150.3
365/2 **Broadcast receiving and sound reproducing equipment, other than gramophone records and pre-recorded tapes**	123.6	126.1 p	126.2 p	126.7	126.9e
Domestic television receivers	126.4	128.7 p	128.7 p	129.3	129.3
—monochrome	126.9	128.6	128.6	134.6	134.6
—colour	126.3	128.7 p	128.7 p	128.7	128.7
Stereo audio systems, incorporating turntable/amplifier	112.6	112.3 p	112.6 p	113.0	113.9e
368 **Electrical appliances primarily for domestic use**	153.2	161.9	163.1	167.4	168.3
Domestic electric cooking apparatus	156.5	166.1	168.0	174.2	174.6
Domestic electric flat irons	148.2	155.3	165.5	165.5	165.5
Domestic electric heating apparatus	157.3	169.9	169.9	175.3	179.3
Domestic space heating apparatus	164.2	174.7	174.7	181.8	182.1
Electric water heaters	151.6	172.4	172.4	172.4	189.8
Vacuum cleaners	155.0	163.7	166.3	166.3	166.3
Domestic refrigerators and freezers	144.0	148.4	148.4	150.3	150.3
Miscellaneous domestic electric appliances (includes food and drink mixers, hair dryers and dry shavers)	153.5	161.3	161.3	170.4	170.5e
369/4 **Electric lamp bulbs and tubes**	155.4	165.1	165.1	165.1	166.2
Fluorescent tubular lamps	155.4	167.3	167.3	167.3	168.5
Electric lamp bulbs, filament type					
—exceeding 28 volts	157.4	165.6	165.6	165.6	166.6
XI Vehicles					
380 **Wheeled tractors, complete**	178.7	194.3	194.3	194.3	194.5
381 **Motor vehicles**	159.8	174.7	175.2	176.2	179.9
Passenger cars	162.6	178.2	178.2	178.3	182.8
Passenger cars [3]	162.6	178.2	178.2	178.3	182.8
Commercial and public service vehicles	161.8	178.5	178.5	179.7	184.6
Commercial vehicles	162.5	178.6	178.6	178.7	183.2
Commercial vehicles and chassis not exceeding 3.5 tons gvw	168.1	186.5	186.5	186.5	192.9
Commercial vehicles and chassis exceeding 3.5 tons but not exceeding 16 tons gvw	160.5	176.3	176.3	176.3	180.2
Commercial vehicles and chassis exceeding 16 tons gvw	158.0	171.3	171.3	171.7	174.4
Public service vehicles	160.3	177.9	178.0	181.3	187.2
XII Metal goods not elsewhere specified					
390 **Engineers small tools and gauges**	165.4	185.6	187.6	191.8	192.4
Engineers cutting tools	165.5	185.1	186.9	191.2	191.5
Hard metal tipped tools	186.7	205.3	205.3	205.3	205.3
Diamond tipped tools and diamond dies	157.1	224.9	224.9	238.1	238.1
Saws					
Hacksaw blades	186.0	214.0	217.1	222.6	222.6
Milling cutters	149.6	163.4	165.7	165.7	165.7
Lathe and planer tools	176.4	218.3	220.1	220.7	222.2
Engineers gauges and measuring instruments	162.9	190.9	191.5	191.8	192.5
391 **Hand tools and implements**	160.3	177.0	177.3	177.5	178.3
Agricultural, horticultural and foresters hand tools	173.1	187.4	187.4	187.8	188.1
Hand saws and hand saw blades	180.4	205.9	206.1	206.1	207.7
Hand tools and implements excluding agricultural and foresters hand tools and saws and saw blades	156.8	175.1	175.5	175.6	175.7
Pliers, pincers and nippers, etc	182.1	203.3	204.4	206.2	206.2
Spanners and wrenches	160.5	181.6	182.5	182.5	182.5
Planes, hammers, cold chisels etc, screwdrivers, wood chisels and gouges	155.7	176.1	176.1	176.1	176.1
Measuring and marking out tools	146.1	155.6	155.7	155.7	164.1
392 **Cutlery, spoons, forks and plated tableware etc**	151.4	166.4	171.4	172.3	172.3
Finished cutlery suitable for domestic or personal use	151.8	169.7	171.1	171.1	171.1
Scissors and tailors' shears (including pinking shears)	158.2	171.8	171.8	171.8	171.8

Table 3 **Commodities produced in the United Kingdom (home sales)** *continued*

1975 = 100

1968 SIC order or MLH and industry	1978 May	1979 Feb	Mar	Apr p	May p
Finished spoons and forks of all kinds (incl. fisheaters, butter knives and ladles) of stainless steel	154.7	172.1	172.1	178.2	178.2
393 **Bolts, nuts, screws, rivets etc**	166.2	172.8	173.4	177.1	178.3
Precision standard bolts etc, of high tensile steel	150.1	152.7	152.7	153.1	153.9
394 **Wire and wire manufactures**	147.8	161.2	168.5	174.6	174.8
Iron and steel wire	149.9	159.3	166.6	173.6	175.2
Single drawn wire other than alloy and high carbon steel	148.7	160.9	160.9	172.2	173.8
Wire ropes (excluding insulated electric wire and cable)	144.5	158.0	158.0	159.2	161.2
Iron and steel woven wire, cloth gauze fabric etc, (excluding netting and fencing) of square or rectangular mesh	159.1	160.7	173.1	173.3	173.3
—stainless steel	149.7	152.0	162.6	162.6	162.6
—other than stainless steel	163.9	165.2	178.5	178.9	178.9
Other wire manufactures, ie grille netting, fencing reinforcement fabric etc	150.7	155.2	162.4	170.3	171.2
Wire of copper, brass and other copper alloys					
Woven wire cloth, gauze fabric, etc, of copper and brass, etc	150.4	152.5	174.4	174.9	175.0
Reinforcement fabrics	150.3	150.3	160.8	162.2	163.0
Chain link fencing	155.4	170.0	170.0	185.8	186.9
399 **Metal industries not elsewhere specified**	153.8	167.7	168.8 p	170.8	172.0
399/1 **Metal furniture**	146.6	158.3	159.0 p	163.0	164.0
Office metal furniture	149.9	168.0	168.1 p	179.9	181.4
Filing cabinets and other filing containers	155.9	172.2	172.2 p	185.8	185.8
399/2 **Metal windows and door frames**	165.1	179.4	180.9	186.1	189.1
399/6 **Domestic hollow ware**	154.0	174.3	174.3	174.4	174.8
Cookware	157.5	181.6	181.6	181.6	182.2
399/7 **Vats, tanks, cisterns and other industrial hollow ware**	154.4	162.6	162.6	170.5	172.8
Steel drums	157.3	165.8	165.8	170.9	173.4
399/8 **Needles, pins, fishhooks and other metal smallwares**	170.9	184.4	187.8	189.0	191.1
399/9 **Domestic gas appliances**	160.6	171.5	172.0	172.1	172.5
Gas cookers	159.9	170.8	170.8	170.8	170.8
Gas fires and space heaters	163.7	172.6	174.3	174.8	176.2
Water heaters and other domestic gas apparatus (excl. refrigerators and meters)	158.2	172.6	172.7	172.7	172.7
399/12 **Miscellaneous metal goods**					
Sanitary ware and plumbing fixtures and fittings	156.0	175.9	180.1	180.7	181.2
Fire extinguishers (hand operated chemical type only)	140.7	152.4	152.4	153.3	153.3
Catering equipment	155.6	168.1	169.3	172.5	174.5
Plumbers brassware	152.9	178.7	183.5	184.4	184.4
XIII Textiles					
411 **Man-made fibres production**	127.1	132.3	132.9	136.8	138.2
Man-made fibres – continuous filament yarn	136.6	144.5	145.7	151.3	153.7
412 **Spinning and doubling on the cotton and flax systems**					
Single yarns spun on the cotton and flax systems	142.2	153.9	154.9	156.4	159.2
Single yarns of man-made staple fibres spun on the cotton and flax systems	138.0	145.1	147.9	150.2	151.7
Man-made continuous filament yarns, textured, bulked or crimped, – synthetic fibres	121.0	135.2	137.4	142.2	143.4
Finished thread for sewing, embroidery, etc	166.8	181.1	181.1	181.1	181.1
—of man-made fibres	140.0	151.2	151.2	151.2	151.2
413 **Weaving of cotton, linen and man-made fibres**	136.5	144.6	145.3	149.2	151.4
Woven cotton cloth in the loomstate	142.2	149.5	150.6	156.6	157.3
Cloth wholly of man-made continuous filament yarn in the loomstate	131.9	139.0	140.8	149.5	151.7 e
Woven linen	165.9	177.0	177.0	177.1	179.6
Woven fabric of glass fibre	162.7	173.3	173.3	173.5	173.5
414 **Woollen and worsted products**	154.5	161.5	164.9	167.3	169.1
414/1 **Wool sorting, cleaning, etc and combing and top making**					
Wool tops [2]	162.2	163.5	175.8	172.7	170.5 e
414/2 **Yarns spun on the worsted and semi-worsted systems**	148.6	156.9	159.9	160.5	160.9
Yarns of wool spun on the worsted system	153.9	160.4	162.7	163.7	164.1
Yarns of man-made fibres spun on the worsted system	136.8	142.0	143.4	143.5	143.7
414/3 **Woven worsted fabrics**	148.4	150.5	152.5	155.7	157.7
414/4 **Wool rag** [2]	157.8	164.5	166.9	174.1	178.2
414/5 **Woollen spinning and weaving**					
Woven woollen fabrics (other than blankets)	161.5	167.9	170.1	175.9	179.3
Woven woollen fabrics (other than blankets) containing 50 per cent or more by weight of wool or fine animal hair	165.2	170.7	171.2	175.4	179.7
415 **Spinning and weaving of jute and other yarns on the jute system**	139.3	143.0	144.9	151.2	153.3
Spun yarns of jute and man-made fibres	143.9	152.2	158.3	163.7	164.2
Woven cloths of jute and man-made fibres	131.9	139.4	139.4	144.7	146.3
Woven cloths of polypropylene on the jute system	139.4	139.0	139.0	146.1	149.4
416 **Rope, twine and net**	124.3	128.8	129.2	136.8	137.6
Cordage, cables, ropes and twine of textile materials (excl. agricultural twines)	123.4	130.3	131.0	137.7	138.0
417 **Hosiery and other knitted goods**					
Socks and stockings	130.9	145.7	147.1	149.7	150.6
Women's socks and stockings	122.6	137.8	139.9	143.7	143.9
419 **Carpets and rugs**	146.8	160.1	160.2	161.0	161.7
Woven carpets and carpet type rugs —faced with yarn containing at least 50 per cent but less than 100 per cent by weight of wool	160.1	176.5	176.7	177.6	177.6
Rugs including pile fabric, deep pile knitted	162.1	179.4	179.7	181.3	181.3
421 **Narrow fabrics**	149.7	165.4	167.6	167.7	167.7
Petershams, galloons and ribbons	154.0	170.6	170.9	170.9	171.4
422 **Made-up textiles**					
422/1 **Household textiles and handkerchiefs**	139.2	149.3	149.9	150.5	151.7
Hand and bath towels	149.4	157.7	157.7	157.7	157.7
429 **Other textile industries**	161.1	176.2	176.2	178.7	180.1
429/1 **Asbestos manufactures**	167.3	184.0	184.0	184.0	184.8
429/2 **Miscellaneous textile industries**					
Mechanically bonded fibre-needled fabrics	155.3	169.9	170.0	180.9	184.0
XIV Leather goods and fur					
431/1 **Leather**					
Finished leather – for footwear	135.2	166.0	179.7	182.4 e	184.7 e
432 **Leather goods**	146.1	164.4 p	164.4 p	165.7	167.1
XV Clothing and footwear					
441 **Weatherproof outerwear**	135.4	146.6	146.6	149.7	150.1
Raincoats (excl. those of infants)					
Raincoats other than of plastics material	132.3	142.1	142.1	144.1	144.6
Weather protective industrial clothing of PVC coated materials	148.3	168.3	168.3	176.6	176.7
442 **Men's and boys' tailored outerwear**	134.2	147.0	147.9	149.0	149.4
Men's and boys' suits	140.4	155.4	157.1	157.1	157.1
Men's trousers (sold separately)	126.0	135.3	135.5	139.6	140.4
444 **Overalls and men's shirts, underwear, etc**	147.8	156.1	156.3	156.8	157.7
444/2 **Men's and boys' shirts, underwear and nightwear**	137.9	146.5	146.8	147.7	149.0
449 **Corsets, gloves and miscellaneous dress industries**	144.5	160.8	161.1	161.9	162.6
Corsets	134.2	149.2	149.2	149.2	150.8
Brassieres	153.1	175.7	175.7	175.7	175.7
449/3 **Umbrellas and walking sticks**	135.3	144.9	145.7	149.8	149.8
450 **Footwear**	146.8	158.3	159.1	161.4	165.6
Outdoor footwear	147.6	159.0	159.8	162.3	167.1
Boots and shoes with uppers wholly or mainly of leather	156.3	168.9	169.8	172.9	179.5
Men's boots and shoes with uppers wholly or mainly of leather	156.0	168.3	169.1	175.3	177.5
Women's boots and shoes – with uppers wholly or mainly of leather	160.1	173.6	175.2	176.3	183.1
Slippers, houseshoes and ballet shoes					
Women's slippers, houseshoes and ballet shoes	147.5	161.2	163.2	163.2	163.2
XVI Bricks, pottery, glass, cement, etc					
461 **Bricks, fireclay and refractory goods**	160.5	172.9 p	173.3 p	177.7	180.0
461/1 **Refractory goods**	167.3	174.5 p	175.0 p	184.6	186.1 e
Refractory bricks and shapes	168.8	175.0 p	176.0 p	179.1	180.4
Firebricks and shapes	154.4	161.2 p	161.2 p	164.4	168.1
461/2 **Clay building bricks and other non-refractory goods**	154.5	170.4	170.9	171.8	174.8
Common, facing and engineering bricks	153.5	169.7	170.2	171.2	174.4
Common bricks	150.6	168.8	169.5	171.6	173.6
—Non-fletton (ex-works)	157.4	175.3	176.6	180.5	184.0
—Fletton (delivered)	142.2	160.7	160.7	160.7	160.7
Facing bricks	156.5	171.2	171.5	171.7	174.7
—Non-fletton (ex-works)	164.3	178.7	179.1	179.4	184.0
—Fletton (delivered)	142.0	157.4	157.4	157.4	157.4
Engineering bricks (ex-works)	150.3	165.6	166.2	166.8	176.7
Engineering bricks (delivered)	162.1	170.0	171.2	171.2	171.2
Clay roofing tiles – (ex-works)	157.9	173.7	173.7	173.7	174.6
Unglazed floor quarry tiles – (ex-works)	158.5	176.3	176.3	176.3	176.3
462 **Pottery**	147.2	165.0	165.2	165.4	168.4
462/1 **Electric ware incl. insulators and insulator fittings wholly or mainly of ceramic material**	150.0	164.0	165.4	167.4	168.4
462/2 **Vitreous china sanitary ware and pottery tiles**	148.1	162.5	162.5	162.5	162.5
Tiles, excl. pre-cast concrete tiles	131.0	145.2	145.2	145.2	145.2
Vitreous china sanitary ware	170.3	185.0	185.0	185.0	185.0
463 **Glass**	157.7	167.3	167.5	167.8	168.1
463/1 **Glass other than containers and vacuum ware**	155.8	166.6	166.7	167.2	167.8
Flat glass	157.6	167.4	167.4	167.8	168.0
Domestic and ornamental glassware	154.9	173.1	173.1	173.1	173.1
—Hand gathered	154.3	167.8	167.8	167.8	167.8
—Mechanically gathered	155.1	175.2	175.2	175.2	175.2
Laboratory hygienic and pharmaceutical glassware and balls, tubing and rods	150.2	164.1	164.1	166.7	167.2
Glazing sheet and plate glass	159.5	169.0	169.0	169.0	169.0

silver accounted for almost half of the 1¼ per cent increase in the index for the metal goods industries.

More than half of the 1¼ per cent increase in the index for the timber industries was accounted for by higher prices for imported softwood and imported plywood and blockboard.

Higher prices for dyes and dyestuffs made the most significant contribution to the 1¼ per cent increase in the index for the textile industries.

Lower prices for copper, partly offset by higher prices for lead and nickel, resulted in a decrease of 1 per cent in the index for the non-ferrous metals industry. Over the three-month period this index rose by 2¼ per cent.

The index for materials purchased by the food manufacturing industries increased by 1 per cent between April and May to 167.6. The main causes were higher prices for home produced cereals and meat and home-landed fish, but there were lower prices for imported cereals.

More about wholesale prices

01-215 3544	tables 1 and 2
01-215 3549	engineering
01-215 5216	chemicals, steel, building materials, etc
01-215 3548	textiles, clothing, timber, paper, etc
01-215 3173	imported commodities

Table 4 Commodities wholly or mainly imported into the United Kingdom

1975 = 100

	1978	1979			
	May	Feb	Mar	Apr p	May p
Hides, skins and fur skins undressed					
Hides and skins, imported	240.4	391.5	465.1	469.8	454.4
Hides	233.9	383.8	461.5	465.2	453.9
Wet	236.0	388.6	464.7	471.4	461.6
Dry	202.4	311.2	413.6	373.6	339.9
Calf skins	326.0	492.1	512.3	530.1	460.2
Hides and skins, UK origin	242.3	410.9	492.6	447.0	454.5
Hides and skins, UK origin and imported	237.2	397.2	476.7	451.0	451.0
Oilseeds, oilnuts and oil kernels	162.9	155.1	158.5	154.3	155.8
Groundnuts, African, cif Europe [1]	180.5	156.2	148.4	149.5	143.8
Copra, Philippine, cif Europe [1]	198.4	297.8	290.1	299.2	306.8
Palm nuts and kernels, Nigerian, cif Europe [1]	210.6	258.6	261.7	265.9	281.5
Soya beans, US No. 2 grade, cif UK [1]	162.8	147.2	151.6	145.4	146.9
Linseed, Canadian No. 1, cif UK [1]	93.6	91.0	101.9	100.7	97.8
Animal oils and fats					
Herring oil [1]	163.7	132.0	143.9	142.4	144.7
Fixed vegetable oils and fats					
Cottonseed oil, washed [1]	116.3	129.8	135.3	133.2	132.3
Groundnut oil, London, spot price [1]	176.4	238.7	238.7	238.7	238.7
Olive oil, Spanish edible, max. 1% ffa [1]	110.8	119.8	119.8	119.9	119.9
Linseed oil, cif London/Hull [1]	83.5	100.9	104.6	99.2	93.6
Palm oil, crude, London, spot price [1]	185.2	174.0	176.4	173.2	168.2
Coconut oil, cif Europe [1]	186.1	224.7	271.2	287.3	297.2
Castor oil, Brazilian No. 1 grade [1]	176.9	151.7	155.0	148.1	146.9
Crude rubber					
Natural rubber smoked sheet [1]	176.3	197.8	191.8	196.2	199.6
Wood, lumber and cork					
Softwood (delivered to consumers)	145.1	157.9	163.2	165.9	167.9 e
Hardwood (ex yard or wharf)	163.5	189.6	190.8	191.7	191.6
Keruing	123.9	170.5	169.8	169.6	173.2
Ramin	154.4	220.2	222.2	222.2	218.8
Utile	196.6	212.7	215.0	215.0	217.4
Meranti	135.6	159.4	159.4	164.5	165.5
Wood and cork manufactures					
Plywood and blockboard (delivered to consumers)	146.3	161.4	165.3	171.3	174.6 e
Pulp and paper					
Woodpulp	93.2	103.3	101.6	104.6	105.4
Paper, paperboard and manufactures thereof					
Paper and paperboard	127.4	135.1	135.1	136.5	137.5
Newsprint paper	147.4	159.9	159.9	159.9	159.9
Textile fibres					
Raw wool, greasy or fleece washed, imported	154.3	155.4	164.6	159.0	158.4
Merino	140.4	136.5	143.6	140.4	140.1
Crossbred	171.6	178.9	190.6	182.2	181.2
Raw wool, UK origin	196.2	203.4	213.2	207.4	202.1
Raw wool, UK origin and imported	162.6	165.0	174.3	168.7	167.1
Raw cotton [1]	165.0	161.8	157.0	150.6	155.2
Raw jute [1]	135.3	118.7	117.5	115.3	117.1
Crude fertilisers and crude minerals					
Natural phosphates	75.1	78.4	78.6	79.3	79.0
Asbestos, Canadian, fob Quebec [1]	148.7	143.6	141.1	141.5	141.5
Steatite talc [1]	143.8	143.8	143.8	166.7	166.7
Metalliferous ores and metal scrap					
Bauxite, min. 86% Al_2O_3 [1]	160.1	170.5	170.5	170.5	170.5
Manganese ore, 48-50% Mn grade max. 0.1%P, cif Europe [1]	118.1	107.3	105.6	103.7	104.4
Chrome ore [1]	122.0	110.9	109.1	107.1	107.9
Tungsten ore, min. 65%, cif Europe [1]	183.3	150.7	168.9	156.7	165.2
Titanium ore [1]	114.9	104.9	102.2	98.8	99.6
Non-ferrous metals					
Silver, refined and partly refined [1]	141.3	183.1	181.9	179.2	203.3
Copper, LME settlement price [1]	128.3	174.1	180.3	181.0	167.7
Nickel, free market price [1]	130.3	107.4	125.7	144.6	178.2
Lead, LME settlement price [1]	160.7	282.0	310.2	299.8	323.2
Zinc, producers' price [1]	86.4	106.2	107.3	105.5	107.4
Zinc, LME settlement price [1]	92.0	118.6	116.1	112.9	112.8
Tin ingot, min. 99.75% LME settlement price [1]	208.4	235.5	238.9	236.4	241.4
Magnesium [1]	145.7	145.7	145.7	145.7	145.7
Bismuth [1]	78.7	71.6	70.4	68.8	69.6
Petroleum and petroleum products					
Crude oil [2]	140.9	136.5	136.9	137.5	151.4 e
Chemical elements and compounds					
Mercury, min: 99.99%, cif Europe [1]	123.2	186.9	203.4	217.2	252.3

[1] Source of information: trade publications. [2] Based on unit value of imports at their time of entry. p Provisional. e Estimates which are subject to possible major revision.

Table 5 United Nations index numbers of world export prices [1]

1975 = 100

	Primary commodities									Primary commodities and non-ferrous metals [2]		
	Total			Agricultural non-food			Non-ferrous metals					
	$	£	Purchasers' currencies	$	£	Purchasers' currencies	$	£	Purchasers' currencies	$	£	Purchasers' currencies
1974 1st qtr	103	108	82	126	133	101	138	145	110	107	113	86
2nd	102	102	77	121	121	92	160	160	122	110	110	83
3rd	104	106	80	119	121	92	120	122	93	106	108	82
4th	106	110	91	112	116	96	105	108	90	106	109	91
1975 1st qtr	102	102	85	103	103	86	104	104	87	102	102	85
2nd	98	101	82	100	103	84	102	105	85	99	102	83
3rd	98	111	87	100	113	89	99	112	88	98	111	87
4th	102	120	92	97	114	87	96	113	86	101	119	91
1976 1st qtr	103	124	94	101	121	92	100	120	91	103	124	94
2nd	105	140	98	107	142	100	111	148	103	106	141	99
3rd	106	144	98	110	149	102	117	159	109	107	145	99
4th	108	157	99	121	176	111	108	157	99	108	157	99
1977 1st qtr	117	164	107	126	176	115	120	168	110	117	164	107
2nd	120	168	108	133	186	120	117	163	105	120	168	108
3rd	116	160	103	118	163	105	114	158	102	116	160	103
4th	116	153	100	117	155	101	117	155	101	116	153	100
1978 1st qtr	118	147	98	122	152	101	119	148	98	118	147	98
2nd	118	154	96	129	169	105	120	157	98	118	154	96
3rd	119	148	92	134	166	104	129	160	100	120	149	93
4th	122	148	91	141	171	106	138	167	103	124	150	93
1979 1st qtr *(3)*	*122*	*145*	*91*	*141*	*168*	*106*	*138*	*164*	*103*	*124*	*148*	*93*
April *(4)*	*125*	*150*	*93*	*143*	*171*	*108*	*143*	*164*	*103*	*126*	*149*	*94*
May *(4)*	*126*	*152*	*94*	*144*	*173*	*110*	*146*	*163*	*104*	*128*	*150*	*96*

[1] Published by the UN in terms of US Dollars. For convenience the index numbers are also shown in sterling and in terms of puchasers' currencies by converting the dollar index at prevailing exchange rates. [2] This combined index is not published as such by the UN. [3] Provisional. [4] Projections by Department of Industry.

Index of industrial production to April

Implied level of output

Seasonally adjusted average 1975 = 100

	Output of all industries	Output of all industries other than extraction of petroleum and natural gas	Output of all industries other than construction	Output of all manufacturing industries
Weights (1975)	1000	999.7	810	697
1973	110.1	109.9	108.3	109.2
1974	105.7	105.7	105.7	107.4
1975	100.0	100.0	100.0	100.0
1976	102.5	101.2	103.4	102.2
1977	106.5	102.5	108.3	103.8
1978	110.4	104.6	111.5	104.4
1974 1st qtr	102.0	102.0	100.2	103.6
2nd	108.7	108.8	108.9	110.6
3rd	108.2	108.2	109.0	110.0
4th	103.9	103.9	104.8	105.2
1975 1st qtr	102.8	103.1	103.3	104.2
2nd	99.4	99.5	99.2	99.1
3rd	98.1	98.2	97.8	97.7
4th	99.6	99.2	99.6	98.9
1976 1st qtr	100.9	100.3	100.9	100.2
2nd	101.9	100.8	102.8	101.8
3rd	102.0	100.6	103.2	102.2
4th	105.4	103.1	106.6	104.4
1977 1st qtr	106.5	103.1	108.6	105.2
2nd	106.2	102.2	108.4	103.5
3rd	106.6	102.6	108.4	103.6
4th	106.6	102.2	107.8	102.9
1978 1st qtr	107.3	102.4	108.6	102.6
2nd	111.6	105.9	112.5	105.7
3rd	112.1	106.3	113.2	106.0
4th	110.6	104.0	111.5	103.4
1979 1st qtr	109.3	101.8	112.4	102.1

Index of industrial production: summary

Average 1975 = 100

	Total all industries	All industries other than construction	Mining and quarrying	Manufacturing industries: Total manufacturing industries	Food, drink and tobacco	Chemicals, coal and petroleum products	Metal manufacture	Engineering and allied industries	Textiles, leather and clothing	Other manufacturing	Construction	Gas, electricity and water
Order	II-XXI		II	III-XIX	III	IV-V	VI	VII-XII	XIII-XV	XVI-XIX	XX	XXI
Weights	1 000	810	41	697	77	66	47	298	67	142	182	60
1973	109.5	107.6	110.1	108.3	103.2	107.7	125.1	103.5	111.3	114.7	118.2	99.3
1974	105.1	105.0	89.9	106.5	102.5	110.6	114.6	104.6	103.6	109.6	105.8	99.2
1975	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1976	102.0	102.7	125.8	101.4	102.7	111.3	106.9	97.0	100.9	103.9	98.6	102.9
1977	105.8	107.4	187.7	102.8	103.9	114.4	102.0	98.9	101.6	105.7	98.2	107.0
1978	109.8	110.8	232.4	103.6	106.0	115.3	100.7	99.2	101.2	108.3	105.7	110.3
1978 1st qtr	107.0	108.3	209.6	102.3	106.3	111.8	96.5	99.9	98.0	104.4	101.9	107.7
2nd	110.7	111.5	228.8	104.5	107.3	115.0	107.4	99.6	101.2	109.1	107.3	111.9
3rd	111.5	112.4	236.3	105.2	104.7	117.7	101.1	100.7	103.7	110.9	107.2	112.7
4th	110.0	110.9	255.0	102.6	105.9	116.7	97.6	96.6	101.9	109.0	106.3	108.8
1979 1st qtr	108.9	111.8	274.3	101.4	105.5	111.5	97.1	98.3	99.3	103.6	96.0 pe	117.5
1978 Jan	106.9	108.2	207	102.3	108	112	92	100	98	105		107
Feb	107.3	108.6	216	102.0	105	111	97	100	98	105	102	110
Mar	106.8	108.1	206	102.5	106	113	101	100	98	103		105
Apr	111.0	111.9	221	105.1	106	115	106	100	105	111		115
May	110.0	110.6	231	103.5	107	114	106	99	99	107	107	111
Jun	111.1	111.9	234	104.9	110	116	110	99	100	110		110
Jul	111.6	112.6	236	105.1	104	118	111	100	104	108		115
Aug	112.1	113.2	238	106.0	105	118	92	102	105	114	107	113
Sep	110.8	111.5	236	104.4	105	116	100	99	102	111		110
Oct	108.8	109.3	241	101.7	106	116	97	96	100	108		108
Nov	109.8	110.6	260	102.5	108	118	93	95	104	110	106	105
Dec	111.5	112.6	264	103.7	104	116	102	99	102	109		114
1979 Jan	103.4	105.0	278	93.4	103	96	77	92	95	95		117
Feb	110.7	114.0	282	103.5	106	119	102	100	100	106	96	118
Mar	112.5	116.3	264	107.3	108	120	113	103	103	110		118
Apr	115.0	116.4	277	106.8	106	120	109	103	101	111		117
Percentage change latest three months on:												
1. previous three months	4.1	5.6	2.6	6.0	1.7	9.0	18.8	6.9	1.2	3.7		5.2
2. a year earlier	4.0	5.5	28.0	2.6	1.3	6.1	6.7	1.9	1.1	2.3		6.7

pe Preliminary estimate

Provisional estimates for the first four months of 1979 suggest that, in total, the underlying level of industrial output is much the same as it was in summer 1978, a small reduction in manufacturing industries' output being broadly offset by an increase in the output of the energy sector.

Any comparison of industrial output in the latest three months with that in earlier periods is severly affected by the losses during, and recovery following, industrial disputes in autumn 1978 and early 1979 and by the particularly adverse winter weather. The three-month on three-month comparisons must be therefore interpreted with caution.

On longer-term comparisons the all industries' index in the period February to April 1979 (which included some recovery of lost output) was about 4 per cent above its level in the same period a year ago; a similar comparison for manufacturing industries shows a rise of 2½ per cent. Over the same period the index for industries other than exploration for and extraction of petroleum and natural gas rose by 1½ per cent.

The use for some industries of series which measure deliveries rather than production can result in index numbers overstating or understating the level of output. The table 'implied level of output' gives a broad assessment of the aggregate measures adjusted for this effect – these series are only available quarterly.

The estimates for the first quarter have been revised mainly because of later, but still not complete, information for the construction industry.

Notes

1 Many of the series used in compiling the index of production, in particular for manufacturing industry, measure deliveries rather than production. Deliveries account for about 70 per cent of the index of production of manufacturing industry and may differ from production in a given month because of movements in stocks of finished goods and work in progress. Figures for industrial output adjusted for movements in stocks are available only quarterly and in arrears of the latest index data. Figures including the first quarter of 1979 are shown in the table 'implied level of output'. The index includes a number of sectors of industry for which only quarterly data are available, representing 18 per cent of manufacturing activity and 69 per cent of other activity.

2 Provisional estimates for the first quarter of 1979 are less reliable than usual because of the difficulties of identifying the effects of disruptions to, and subsequent recovery in, industrial production over this period.

3 The index numbers are all seasonally adjusted, to remove annually recurring month to month variations due, for example, to the incidence of holidays and other regular seasonal patterns of behaviour. The adjustments can only be derived from analysis of past data and may not be completely appropriate when holiday patterns change sharply.

4 For the construction industry, the Department of the Environment has provided preliminary estimates for the latest quarters which are based, in advance of receipt of regular returns from the industry, on broad indicators of activity. These preliminary estimates are liable to substantial revision.

Index of industrial production: detailed analysis

Average 1975 = 100

	Mining and quarrying		Food, drink and tobacco		Chemicals, coal and petroleum products		Metal manufacture		Engineering and allied industries				
									Engineering				
	Coal mining	Other mining and quarrying	Food	Drink and tobacco	Coal and petroleum products	Chemicals and allied industries	Ferrous	Non-ferrous	Total engineering	Mechanical engineering	Instrument engineering	Electrical engineering	Shipbuilding and marine engineering
MLH	101	102-109	211-229	231-240	261-263	271-279	311-313	321-323	331-369	331-349	351-354	361-369	370
Weights	34	7	54	23	9	57	35	12	170	92	12	66	14
1973	103.3	141.6	106.0	96.3	120.6	105.8	127.8	116.9	98.4	97.2	92.4	101.3	95.4
1974	85.5	110.3	104.0	99.1	115.9	109.8	114.8	113.8	102.3	101.3	98.7	104.5	98.9
1975	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1976	92.8	278.5	103.2	101.6	105.7	112.2	106.9	106.9	96.5	95.1	96.6	98.5	96.5
1977	90.1	638.7	105.1	101.2	102.7	116.2	99.8	108.7	97.3	93.2	98.7	102.7	93.3
1978	89.2	894.4	105.9	106.4	101.4	117.4	98.4	107.3	99.7	92.8	105.1	108.2	86.4
1978													
1st qtr	89.9	762.8	105.7	107.6	98.2	113.9	93.7	104.9	98.4	92.0	101.3	106.8	90.3
2nd	88.6	876.9	106.3	109.5	98.6	117.5	106.8	109.0	99.2	92.5	105.0	107.6	87.6
3rd	89.7	914.0	106.8	99.6	105.3	119.6	98.3	109.5	100.8	94.8	106.3	108.3	86.7
4th	88.6	1 024.0	104.7	108.8	103.6	118.7	94.9	105.7	100.1	91.9	107.7	110.2	81.1
1979													
1st qtr	88.3	1 134.2	104.1	108.8	100.5	113.2	95.8	101.1	98.4	87.7	105.0	112.3	86.8
1978													
Jan	89	752	109	107	97	114	88	103	98	92	100	106	90
Feb	90	796	103	109	95	113	94	103	98	92	101	107	91
Mar	91	741	105	107	102	114	99	109	99	92	102	108	90
Apr	90	824	103	111	98	117	103	112	99	92	105	107	85
May	87	898	107	106	99	116	106	106	99	92	105	108	87
Jun	89	908	109	112	99	119	111	108	100	93	105	108	90
Jul	90	910	107	98	107	120	112	111	101	95	106	108	88
Aug	89	923	108	100	106	120	85	113	101	95	106	108	88
Sep	90	909	106	101	103	118	99	105	101	95	107	109	83
Oct	88	950	104	110	105	118	95	103	100	93	106	109	84
Nov	90	1 048	106	112	101	120	90	102	100	92	108	110	86
Dec	88	1 074	104	104	104	118	99	112	101	91	109	112	74
1979													
Jan	88	1 153	102	105	99	95	72	92	93	83	98	105	88
Feb	88	1 176	104	110	105	121	99	108	98	88	104	111	89
Mar	88	1 073	106	112	98	123	116	103	105	92	112	121	83
Apr	87	1 157	106	107	98	123	111	105	105	92	113	122	90
Percentage change latest three months on:													
1. previous three months	−1.2	4.0	1.4	2.4	−1.0	10.3	24.9	3.1	5.0	2.5	4.7	8.0	5.8
2. a year earlier	−2.8	44.3	1.7	0.5	1.8	6.6	10.0	−2.5	4.0	−1.3	6.9	9.9	−1.6

	Engineering and allied industries (continued)				Textiles, leather and clothing			Other manufacturing					
	Total vehicles	Motor vehicles	Other vehicles	Metal goods not elsewhere specified	Textiles	Leather, leather goods and fur	Clothing and footwear	Total bricks, pottery, glass, etc	Bricks, cement, etc	Pottery and glass	Timber, furniture, etc	Paper, printing and publishing	Other manufacturing industries
MLH	380-385	381	380, 382-385	390-399	411-429	431-433	441-450	461-469	461, 464-469	462,463	471-479	481-489	491-499
Weights	68	43	25	46	40	3	24	28	17	11	25	58	31
1973	113.3	118.8	103.5	110.1	117.1	107.1	102.1	113.7	120.7	103.5	118.9	115.7	110.2
1974	108.9	110.8	105.6	108.7	105.9	98.7	100.2	107.2	109.1	104.4	102.1	115.5	106.8
1975	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1976	97.0	100.2	91.3	98.8	103.0	102.3	97.1	101.0	99.1	103.8	103.9	102.5	109.0
1977	100.9	107.2	89.6	104.0	100.9	97.1	103.2	99.8	93.7	108.5	97.6	106.9	115.4
1978	98.6	103.7	89.5	102.5	99.3	96.8	104.9	101.2	93.9	111.9	102.2	109.2	118.4
1978													
1st qtr	104.3	112.8	89.0	102.1	97.0	90.7	100.7	97.0	90.5	106.4	97.9	105.6	114.4
2nd	101.6	108.1	90.0	101.7	100.1	98.9	103.5	102.5	94.8	113.7	103.5	109.0	119.7
3rd	100.5	106.8	89.2	104.9	101.3	99.9	108.2	103.4	93.7	117.4	104.3	111.9	121.4
4th	88.0	87.2	89.6	101.3	99.0	97.8	107.4	101.9	96.5	109.9	103.0	110.1	118.2
1979													
1st qtr	100.2	107.4	87.5	98.3	95.2	97.5	106.4	93.8	88.7	101.3	100.2	102.6	117.2
1978													
Jan	106	115	89	102	97	91	100	98	91	108	97	105	118
Feb	103	111	89	102	98	91	100	97	90	108	98	106	116
Mar	104	113	89	102	96	91	102	96	90	103	99	106	109
Apr	104	111	90	105	104	99	106	105	96	119	106	109	121
May	103	110	90	98	98	99	101	100	94	109	101	108	117
Jun	99	104	90	102	98	99	103	102	95	112	103	110	121
Jul	100	106	89	104	100	100	112	101	92	114	102	109	117
Aug	105	114	89	108	104	100	107	104	94	119	105	114	127
Sep	97	101	89	103	100	100	105	105	95	119	105	113	120
Oct	86	84	89	99	99	98	103	101	96	109	101	108	118
Nov	81	76	90	103	100	98	111	102	97	109	103	113	119
Dec	97	101	90	102	98	98	108	103	97	111	105	110	117
1979													
Jan	93	96	87	89	91	98	101	85	87	82	93	94	110
Feb	104	113	87	103	96	98	106	97	88	111	101	105	118
Mar	104	113	88	103	98	98	112	99	91	111	107	108	124
Apr	101	106	91	102	95	na	111	104	96	116	105	112	119
Percentage change latest three months on:													
1. previous three months	13.9	21.6	0.0	4.4	0.2	–	2.8	3.9	−1.9	11.6	4.0	3.0	4.6
2. a year earlier	−0.7	−0.8	−0.4	−0.6	−2.5		6.6	0.7	−0.5	2.1	3.3	1.4	4.5

Combined engineering sectors: sales and orders up to March

After addition of information for March and revisions to earlier data the trend and seasonally adjusted volume index numbers of sales and orders for the combined engineering industries point to a marked recovery from the particularly poor performance of January caused by industrial disruption and extreme weather conditions.

The trend of total sales suffered a reverse in the last quarter of 1978 (largely because of the exceptionally low seasonally adjusted figure in January) but the distinct upward movement in the trend and sharp recovery in the seasonally adjusted series over the latest two months are hopeful signs. The trend of new orders has declined over the last three months, following very large inflows in the fourth quarter, but remains at a higher level than during 1977 and most of 1978. The trend of total orders on hand has increased steadily over the past nine months although it is still a long way below the peak levels of 1974.

During recent months the home market has shown much less vigour than the export market. The seasonally adjusted series for home sales recovered sharply from the January low but the trend level of mid 1978 has yet to be regained. The relative sluggishness of the home market is emphasised by the disappointing level of the seasonally adjusted figures for new orders since January. Nevertheless, home orders on hand continue on the rising trend which began towards the end of 1977.

The export market presents a much brighter prospect. Here the trend in sales recovered very strongly in February and March reaching a level last encountered eighteen months earlier. The seasonally adjusted and trend figures for export new orders were also exceptionally high in the latest two months leading to a distinct lengthening of export order books. Export orders on hand are now at a higher level than the average for any year since 1974.

The revised figures published in this table are based on the monthly engineering inquiry relating to March 1979. The response rate of 78 per cent to the inquiry for March 1979 is judged sufficient to justify publication of provisional indices for this month. Taking into account late returns now received for December, January and February response rates for these months were 92, 90 and 87 per cent respectively.

An expanded commentary, together with additional tables, is given in Business Monitor PM 33–66, Engineering (volume indices of sales and orders), obtainable from HMSO, PO Box 569, London SE1 9NH, post free for a subscription of £5.40 per annum. Separate commentaries and volume indices are given for sales, orders-on-hand and new orders for total, home and export markets, for mechanical, instrument and electrical engineering (SIC orders VII, VIII and IX respectively).

The same nine series are given for each of the 36 industries within engineering in a quar-

Volume index numbers for the combined engineering industries up to March

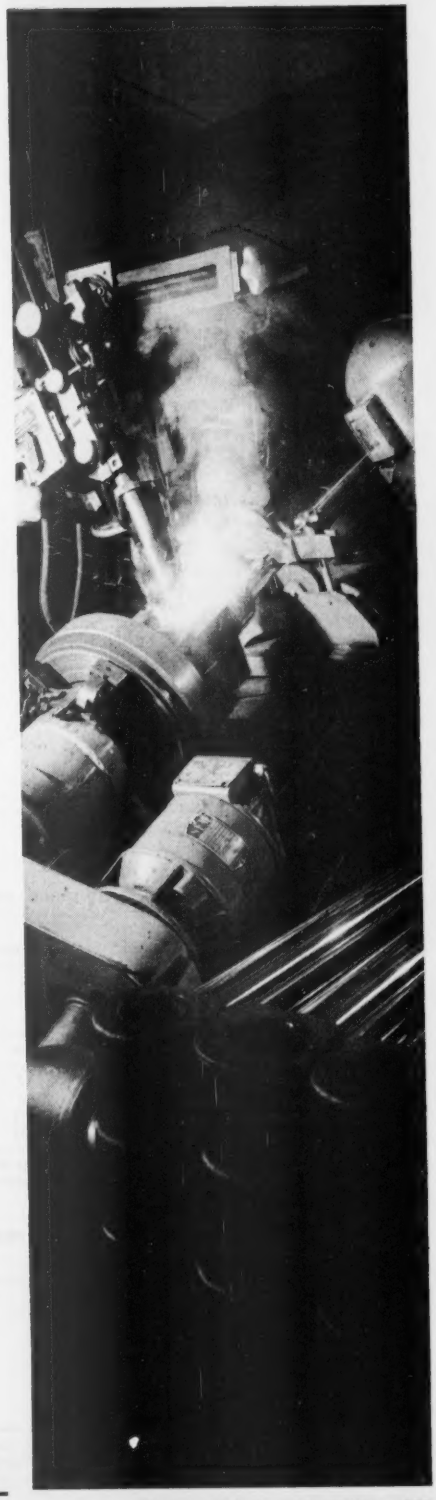
	Total			Home			Export		
	1975 average = 100	1975 average monthly sales = 100		1975 average = 100	1975 average monthly sales = 100		1975 average = 100	1975 average monthly sales = 100	
	Orders-on-hand (end of period)	New orders	Sales	Orders-on-hand (end of period)	New orders	Sales	Orders-on-hand (end of period)	New orders	Sales
Ratio orders-on-hand/ av monthly sales in 1975 [1]	7.7			7.3			8.5		
Trend estimates									
1976									
September	80	99	97	76	90	95	89	119	100
October	81	100	97	76	91	95	91	120	102
November	81	100	98	75	92	96	93	118	103
December	81	100	98	75	93	96	94	115	103
1977 p									
January	82	99	98	74	93	95	95	113	103
February	82	99	97	74	93	95	97	112	102
March	82	98	97	74	92	94	98	111	102
April	82	97	96	74	92	93	99	111	103
May	82	97	96	73	91	93	99	111	105
June	82	97	96	73	91	92	100	110	107
July	82	96	97	73	91	92	100	109	108
August	82	97	96	73	92	92	100	106	108
September	82	97	96	73	93	91	99	105	107
October	82	98	96	74	94	92	99	105	106
November	83	99	96	74	95	92	100	107	105
December	83	99	96	75	96	93	100	108	104
1978 p									
January	83	100	97	75	96	94	100	108	105
February	84	99	98	75	96	95	101	107	105
March	84	98	98	75	96	95	100	105	106
April	83	98	99	75	96	95	100	102	106
May	83	97	99	75	95	96	99	101	106
June	83	97	99	75	96	96	99	101	105
July	83	99	99	75	97	96	99	103	105
August	83	102	99	76	101	97	99	106	105
September	84	106	99	77	105	97	99	107	105
October	86	108	98	78	108	96	99	108	104
November	87	108	97	80	108	95	100	109	103
December	88	108	97	82	106	94	101	111	102
1979 p									
January	90	106	97	83	103	94	102	115	103
February	91	105	98	84	99	95	104	120	105
March	91	103	99	85	95	95	105	124	107
Percentage change [2]									
Dec 1978-Mar 1979	+3.5	−4.0	+1.5	+3.5	−11.0	+0.5	+3.5	+11.5	+4.5
Seasonally adjusted									
1973	113	116	99	120	121	105	100	105	84
1974	114	103	102	115	102	104	112	106	97
1975	88	84	100	87	83	100	90	84	100
1976	81	92	97	74	87	95	94	104	101
1977 p	83	98	97	75	93	93	100	109	105
1978 p	89	102	99	83	101	96	100	106	106
1976									
1st qtr	84	85	96	83	83	93	86	90	100
2nd	80	87	97	79	86	96	82	89	101
3rd	80	97	96	77	90	95	87	114	99
4th	81	100	97	74	90	94	94	123	103
1977 p									
1st qtr	82	99	97	74	95	96	97	109	102
2nd	82	97	97	73	90	93	101	116	106
3rd	82	97	97	73	93	92	100	105	108
4th	83	99	96	75	97	92	100	104	104
1978 p									
1st qtr	83	99	99	75	95	95	100	109	107
2nd	83	96	98	75	95	95	99	99	104
3rd	84	103	100	75	99	98	101	113	105
4th	89	111	99	83	114	96	100	104	106
1979									
1st qtr	91	101	97	83	93	94	106	121	103
1977 p									
January	81	103	101	74	98	99	95	115	105
February	82	100	98	75	98	96	96	103	102
March	82	94	94	74	88	92	97	109	97
April	82	101	98	74	92	94	99	121	106
May	83	98	94	74	90	90	100	117	103
June	82	94	98	73	87	93	101	110	108
July	82	94	98	73	96	94	98	91	109
August	83	102	95	74	96	90	100	117	106
September	82	93	97	73	86	91	100	108	110
October	82	100	97	73	95	93	100	110	107
November	83	95	93	74	95	89	99	93	102
December	83	104	97	75	101	95	100	110	102
1978 p									
January	83	94	96	75	92	92	99	99	105
February	85	109	98	75	96	95	103	140	106
March	83	94	103	75	96	99	100	90	111
April	83	94	96	75	92	93	100	96	102
May	84	102	99	75	100	96	100	107	106
June	83	93	99	75	93	96	99	95	105
July	83	100	98	76	101	95	98	96	103
August	83	101	100	76	98	96	97	107	111
September	84	109	102	75	99	102	101	135	102
October	84	96	96	76	98	93	100	93	103
November	88	123	97	82	135	94	99	98	105
December	89	113	102	83	111	99	100	120	109
1979 p									
January	90	94	85	84	92	85	102	99	83
February	91	105	101	84	92	97	105	134	112
March	91	104	104	83	93	99	106	130	114
Oct-Dec 1978 (av)	89	111	99	83	114	96	100	104	106
Jan-Mar 1979 (av)	91	101	97	83	93	94	106	121	103
Percentage change [2]	+2.0	−9.0	−2.0	−0.5	−19.0	−2.0	+6.5	+17.0	−2.5

terly Business Monitor PQ 33–36, Engineering (volume indices of sales and orders), also obtainable from HMSO for a subscription of £1.56 per annum.

Inquiries: Department of Industry, Room 607, Dean Bradley House, 52 Horseferry Road, London SW1P 2AG, tel. 01-212 5770.

Notes to table

[1] This ratio shows the number of months work in the order book in the base year at the then average rate of sales. [2] For orders-on-hand the percentage changes compare the level at the end of the latest period shown with the corresponding level for the earlier period. The percentage changes have been based on the unrounded values and are given to the nearest half percentage point. p Provisional.



Export prospects to the end of 1979

Total UK export prospects

The volume of total UK exports in 1979 is forecast to be around 2 per cent above the 1978 level, a smaller rate of growth than the 3½ per cent between 1977 and 1978.

In the first half of 1979, volume is expected to fall compared with the previous half year – by around 2 to 3 per cent – and then to recover in the second half, with an estimated rise of 5 to 6 per cent.

The fall is probably more than accounted for by substantially lower exports to Iran and Nigeria in the early months of 1979. In addition, the road haulage dispute will have affected exports and, although most of the effect will probably work through in the first half, there may be some carry-over of the recovery into the second half of the year.

These estimates are derived from forecasts by the UK's largest exporting companies of their own exports made for the Department of Trade's latest survey of export prospects. The overall picture shown by these estimates is considerably less buoyant than that of the previous survey, which probably only partially reflected the impact of the reduction in shipments to Iran and Nigeria.

Exports of the large exporters

Main features of the latest survey (based on non-seasonally adjusted data) are:

☐ The outturn figures for the large exporters for the first quarter show no growth in volume compared with a year earlier. This outturn is substantially below the forecast of the last survey and largely reflects the impact of the road haulage dispute which was not fully taken into account at that time. The forecast for the second quarter does not appear to incorporate any major rebound effects, but prospects appear more buoyant in the second half of the year.

☐ On prices, the latest forecasts for the large exporters in the second, third and fourth quarters of 1979 are for increases (on a year earlier) of around 13 per cent, about 3 per cent higher than in the last survey. These forecasts are considerably higher than the 3 to 6 per cent recorded by the companies in 1978, and show an acceleration from the increase of 9½ per cent recorded for the first quarter of the year.

☐ Taking volume and price together, in 1979 as a whole the value of exports of the largest exporters is expected to be some 20 per cent higher than a year earlier. The higher level of growth forecast for the second half reflects the distortion to volume described above.

Impact of road haulage dispute

The road haulage dispute in January disrupted the flow of goods at the ports early in the year, but by April and May, when the survey was conducted, exports were again flowing normally. It is expected that most of the effect of the dispute would have worked through in the first half of the year. There may, of course, be some once-for-all loss of exports reflecting cancelled orders and this is likely to have been taken into account in the forecasts made by the respondents to the latest survey.

The figures for the first quarter given in table 3 suggest that the dispute has had less of an impact on the large exporters than for total exports. However, this may reflect, in part, timing differences in the recording of exports as between the survey figures and those appearing in the overseas trade statistics which, on average, relate to shipments some two weeks previously. Thus, the latter will contain a smaller element of recovery of trade.

Derivation of estimates for total exports

In order to derive forecasts for total exports, it is necessary to make an assessment of the relationship between the year-on-year percentage changes for the large exporters and for total exports, which then needs to be expressed in terms of a seasonally adjusted quarterly path for total export volume. This will occasionally lead to a situation in which the pattern of large exporters' volume growth, in terms of change on a year earlier, is different from the trend for total exports.

Table 3 provides a comparison of percentage changes on a year earlier for the large exporters and total exports. These comparisons are influenced by the year earlier figures and may also reflect, among other things, timing differences. As explained above, such differences are likely to be greater than usual in the first two quarters of 1979. As usual, the forecasts of total exports derived from the survey must be interpreted with caution.

Table 3 **Comparison of major companies' outturn with recorded figures for total UK exports** [1]

Percentage change on a year earlier

	Value		Volume		Price [2]	
	Survey companies (outturn)	Total UK (recorded)[1]	Survey companies (outturn)	Total UK (recorded)	Survey companies (outturn)	Total UK (recorded)
1975						
Q3	3½	12	−9½	−7½	13	21
Q4	13	20	−1½	0	13	20
1976						
Q1	26	25	9½	8	15	15
Q2	26	27	9	6½	16	19
Q3	31	30	13	8½	19	20
Q4	39	32	15	8	20	23
1977						
Q1	30	32	9	8½	19	22
Q2	25	29	10	7½	14	20
Q3	21	31	9½	13	11	16
Q4	3	14	−1½	3	4½	11
1978						
Q1	4½	11	2	2	2½	9
Q2	7½	14	4½	7½	4	6½
Q3	9	7	5½	½	4	6½
Q4	11	15	5	7	6½	7½
1979						
Q1	9	2	−½	−6	9½	8½

[1] Recorded OTS less precious stones and North Sea oil production installations. [2] The price index is the average value obtained by dividing the value of exports by the volume figure. This is likely to be closer to the figures given by firms than the unit value index.

Table 1 **Movement in exports by value, volume and price**

	Total UK Exports[1]	Fifteenth survey results for major exporters[2]			
	1979	1979			
	q1	Q1	Q2	Q3	Q4
	Recorded	Outturn	Forecasts		
Value £ million	8 335	2 577	3 124	3 029	3 374
% increase on a year earlier	3½[3]	9	19	23	27
Volume % increase on a year earlier	−4½[3]	−½	5½	9	13
Price % increase on a year earlier	8½[4]	9½	13	13	13

[1] Source: Overseas Trade Statistics. [2] Aggregated from returns received from 57 of the largest exporting companies. [3] If exports of precious stones and North Sea production installations are excluded the figure become 2 and −6 respectively. [4] Average value index. See footnote to table 3.

Table 2 **Comparison of latest survey results for major exporters with previous surveys**

Percentage change on a year earlier

	1979 Q1				1979 Q2			1979 Q3	
	S12	S13	S14	S15 (Outturn)	S13	S14	S15	S14	S15
Value	23	25	25	9	16	20	19	22	23
Volume	14	16	13	−½	8½	9½	5½	10	9
Price	9	8½	11	9½	7	9½	13	10	13

S12 twelth survey, July 1978, provisional results published in *Trade and Industry* 15 September 1978. S13 thirteenth survey, October 1978, provisional results published in *Trade and Industry* 15 December 1978. S14 fourteenth survey, January 1979, provisional results published in *Trade and Industry* 16 March 1979. S15 fifteenth survey, April 1979.

Notes

In the latest survey, the period covered was the four quarters of 1979. The survey was conducted in April and May. Replies were received from 57 companies, covering about a third of the total value of UK exports.

The questionnaire asked for the actual value of firms' export deliveries in the first quarter of 1979 and forecasts for the subsequent three quarters; the percentage change these values represented over the same quarter a year earlier; and how this change was divided between movements in price and volume.

The figures given for total UK exports are derived from the information provided by the large exporters, and involve an assessment of the relationship between this information and data for total exports (see table 3). In addition, the accuracy of the forecasts for total exports will depend on the quality of the information obtained from the companies and how far their own forecasts are realised (see table 2).

The figures for total exports are based on the Standard International Trade Classification (Rev 2) and the price and volume figures derived from data rebased on 1975=100.

Inquiries: 01-215 3155/3170.

Index of retail prices for May

The index of retail prices for all items for 15 May was 215.9 (15 January 1974 = 100). This represents an increase of 0.8 per cent on April 1979 (214.2) and of 10.3 per cent on May 1978 (195.7).

The rise in the index in May was due mainly to increases in the prices of many foods, particularly meat, sweets and chocolates; to increases in petrol prices and other motoring costs; to increases in rents and other housing costs; and to increases in the prices of alcholic drinks.

The movements for the main groups in the index are shown in table 2.

Notes

The retail prices index measures the change from month to month in the average level of prices of goods and services purchased by most households in the UK. The expenditure pattern on which the index is based is revised each year using information from the family expenditure survey. The expenditure of certain higher income households and households of retired people dependent mainly on social security benefits is excluded.

The index covers a large and representative selection of more than 500 separate goods and services, for which price movements are regularly measured in more than 230 towns throughout the country. Approximately 150 000 price quotations are used each month in compiling the index.

Seasonal variations in the index of retail prices are due largely to a very few items of 'seasonal food' that is, those items of food the prices of which show significant seasonal variations. These items account for less than 5 per cent of total retail expenditure. If the variation caused by these items is removed, the underlying trend of the figures can be seen more clearly.

Rates of change of indices can be calculated over periods of any length. However, rates calculated over periods as long as 12 months are slow to detect changes in trend, while calculations over periods as short as three months give rather volatile results. To help in assessing trends, rates of changes in the all items index and the index for all items except seasonal food are shown in table 1 over successive periods of six months.

The index is given in full in the *Department of Employment Gazette*.

Table 2 **Index of retail prices: commodity breakdown**

	Indices (15 Jan 1974 = 100)		Percentage change over the month
	10 Apr 1979	15 May 1979	
All items	214.2	215.9	+0.8
All items excluding food	212.1	213.7	+0.8
Food	221.6	224.0	+1.1
Seasonal food	221.6	222.1	+0.2
Other food	221.9	224.6	+1.2
Alcoholic drink	206.7	209.2	+1.2
Tobacco	231.9	231.9	+0.0
Housing	205.0	206.9	+0.9
Fuel and light	237.2	238.0	+0.3
Durable household goods	193.3	194.6	+0.7
Clothing and footwear	180.8	181.6	+0.4
Transport and vehicles	227.6	230.2	+1.1
Miscellaneous goods	225.6	227.1	+0.7
Services	205.4	206.4	+0.5
Meals out	225.4	227.3	+0.8

Inquiries: Watford 28500 ext. 630.

Table 1 **Index of retail prices**

	All items				All items except seasonal foods		
	Index 15 Jan 1974 = 100	Percentage change over 1 month	6 months	12 months	Index 15 Jan 1974 = 100	Percentage change over 1 month	6 months
1978							
December	204.2	+0.8	+3.5	+8.4	205.1	+0.6	+4.0
1979							
January	207.2	+1.5	+4.6	+9.3	207.3	+1.1	+4.3
February	208.9	+0.8	+4.8	+9.6	209.1	+0.9	+4.3
March	210.6	+0.8	+5.2	+9.8	210.6	+0.7	+4.6
April	214.2	+1.7	+6.5	+10.1	214.0	+1.6	+5.7
May	215.9	+0.8	+6.6	+10.3	215.9	+0.9	+5.9

Carpet industry sales in March

The daily rate of carpet manufacturer's sales by value in March 1979 at current prices was provisionally estimated to have been 12 per cent more than in March 1978 assuming 22 working days in March 1979 and 21 working days in March 1978. In the three months ended March 1979 the daily rate of manufacturers' sales was provisionally estimated to have been 1 per cent more than in the corresponding period 12 months ago assuming 64 working days in the period ended March 1979 and 62 working days in the period ended March 1978. The index numbers which are of manufacturers' sales by value, have been adjusted for the length of the working month, but not for non-statutory holidays or other seasonal factors. The wholesale price index of carpets is shown as a guide to the movement in prices.

Inquiries: 01-212 0017.

Index of carpet manufacturers' sales 1975 = 100

	Index of manufacturers' sales at current prices	Wholesale price index
1974	89	86.7
1975	100	100.0
1976	114	115.7
1977	127	134.7
1978	142	149.7
1977		
4th	145	139.2
1978		
1st qtr	134	145.8
2nd	139	147.0
3rd	135	151.7
4th	159	154.3
1979		
1st qtr	135	159.0
1977		
November	147	139.0
December	142	139.5
1978		
January	125	144.2
February	133	146.6
March	143	146.6
November	159	154.3
December	159	154.4
1979		
January	91	156.5
February	155	160.1
March	161	160.3

Central government transactions

It is provisionally estimated that the central government borrowing requirement for the two months April and May 1979 was £2,549 million compared with £2,157 million in the same period in 1978. For the month of May 1979 the estimate is £1,230 million compared with £1,711 million in May 1978.

Letters to the editor

Letters to the editor should be addressed to the Editor, *Trade and Industry*, Eleventh Floor, Millbank Tower, Millbank, London SW1P 4QU, and *not* to HMSO.

Patents recorded 'licences of right'

Under section 46 of the Patents Act 1977 the register was noted 'licences of right' in respect of the following patents on the date specified:

1 June 1979

1293269 Ford Motor Co Ltd
Display device
1458939 Ford Motor Co Ltd
Sliding door for motor vehicles
1471633 Ford Motor Co Ltd
Internal combustion engine cylinder head and valve assembly
1475024 Ford Motor Co Ltd
Improvements relating to monitoring apparatus
1480011 Ford Motor Co Ltd
Idle system in a carburettor having a variable area venturi
1483567 Ford Motor Co Ltd
A head-rest for motor vehicles
1496198 Ford Motor Co Ltd
Improvements in and relating to water-based paints
1506876 Ford Motor Co Ltd
Method of protecting disc brakes from rust
1508216 Ford Motor Co Ltd
Tyre valve
1126705 Brown, Boveri and Co Ltd
Improvements in and relating to pressure exchangers
1134569 A. P. Unsworth Ltd
Improvements in black boards
1353424 Ernst Leitz Wetzlar GmbH
A method of imparting contrast to a surface portion of an object to be investigated microscopically
1395768 Matsushita Electric Industrial Co Ltd
Automatic tuning apparatus
1473404 Societa Italiana Resine SIR SpA
Process for the production of sodium tripolyphosphate
1512077 Roger Paul Sonneville
Improvements in or relating to a composite railway tie

6 June 1979

1049043 Fibre Controls Corporation
System for controlling operation of equipment such as apparatus for proportioning and blending fibres
1135151 Fibre Controls Corporation
Material distributing system
1199522 Fibre Controls Corporation
Apparatus for controlling the discharge of material
1211256 Fibre Controls Corporation
A web forming apparatus for feeding fibres to subsequent textile equipment
1256030 Fibre Controls Corporation
Fibre blending system
1350675 Fibre Controls Corporation
Device for handling fibres
1419109 Ballestra SpA
A method for producing white oils from high boiling crude oil
1419110 Ballestra SpA
A method and apparatus for the separation of unsaturated and/or aromatic hydrocarbons from saturated hydrocarbons
1443034 Charles Lescrenier
Position locating method and means
1512995 Mitsuishi Fukai Tekkosho Ltd
Improvements in or relating to the forming of bricks by compression
1524938 Cantiere Navaltecnica SpA
Improvements relating to catamarans
1535178 Cyril Sutton
An improved window unit

Any person who claims that the proprietor of the patent is, and was at the time of entry, precluded by a contract in which the claimant is interested from granting licences under the patent may, within three months after the making of the relevant entry, apply to the Comptroller on patents form 31/77 for cancellation of the entry.

I. J. G. Davis, Comptroller

Regional selective assistance

The tables below show, on a regional basis, the number and value of applications received and offers made under section 7 of the Industry Act during March and April 1979.
Inquiries: 01-212 0364.

Region	Applications		Offers	
	No. of projects	Value (£'000)	No. of projects	Value (£'000)
March 1979				
Scotland	20	15 646	13	3 368
Wales	19	3 498	15	1 573
Northern	24	6 194	32	4 176
North west	52	11 887	29	9 886
Yorkshire and Humberside	19	2 592	10	932
South west	8	2 023	6	251
East Midlands	6	716	—	—
West Midlands	—	—	—	—
Total	148	42 556	105	20 186
April 1979				
Scotland	13	7 148	10	1 855
Wales	22	9 530	7	208
Northern	17	5 269	4	93
North west	52	13 978	24	3 194
Yorkshire and Humberside	16	6 438	15	575
South west	5	1 365	3	296
East Midlands	4	684	2	6
West Midlands	—	—	—	—
Total	129	44 412	65	6 227

Overseas royalties and similar transactions in 1977

Table 5, which completes the tabular information for the article published in the 8 June issue, pages 453, 454, is published below:

Overseas royalties and similar transactions
Receipts and expenditure analysed by main activity of United Kingdom business, 1977
(excluding oil, banks and insurance companies)

Summary of returns received — £ million

	Receipts			Expenditure		
	Total	Related	Unrelated	Total	Related	Unrelated
All manufacturing industries	244.50	115.12	129.38	241.17	174.33	66.83
Food, drink and tobacco	20.14	14.58	5.56	8.19	4.59	3.60
Chemical and allied industries	58.71	24.58	34.13	46.96	27.66	19.29
Metal manufacture	3.70	1.17	2.53	2.92	1.30	1.62
Mechanical and instrument engineering	40.29	15.32	24.97	56.01	47.94	8.07
Electrical engineering	40.94	28.01	12.92	71.71	60.27	11.44
Motor vehicles	3.02	1.31	1.70	1.17	0.09	1.08
Textiles, leather, clothing and footwear	9.35	7.91	1.44	3.17	2.22	0.95
Paper, printing and publishing	11.80	6.23	5.57	7.27	2.00	5.28
Rubber	6.75	5.35	1.40	13.37	4.75	8.62
Other manufacturing industries	49.81	10.65	39.16	30.39	23.52	6.87
Distributive trades	2.01	0.59	1.41	2.52	2.12	0.40
Other activities	48.21	3.26	44.96	14.30	3.92	10.38
Total of returns received	294.72	118.97	175.75	257.99	180.37	77.62

Business Monitors

The following titles and issues of Business Monitors are now available:

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Licensed road vehicles reach 17.8m

There are 17.8 million licensed road motor vehicles in Great Britain of which 14 million are licensed as private cars and vans, 1.6 million as general goods vehicles, and 1.2 million as motorcycles, scooters, or mopeds. These figures are given for 1978, the first year where it was possible to take a full census of licensed road motor vehicles from the computer record of vehicle licenses at the driver and vehicle licensing centre in Swansea.

Statistical News
Price 85p, annual subscription including postage £3.88. from HMSO, PO Box 569, London SE1 9NH ISSN 0017-3630

British Film Fund Agency returns

The British Film Fund Agency has authorised the publication of the following information for the four weeks ended 28 April:

	£
Distributors' earnings submitted	
Low-cost films:	
Eligible (after multiplying by 2½)	69 726
Not eligible for 2½ times rental	53 733
	123 459
High-cost films (including newsreels after multiplying by 2½)	561 213
	684 672
Films under 3000 ft (after multiplying by 2½)	184 302
	868 974
Levy collections paid to agency by Customs and Excise to 1 May 1979 including an estimate of collections approximately covering entertainments for the four weeks ended 28 April 1979	513 000

The sixth interim allocation for the twenty-second year will be at the rate of 38 per cent.

Advertisements for 'Trade and Industry'

All advertisement inquiries and bookings should be addressed to the Advertisement Department at 13 Great James Street, London WC1, telephone 01-242 9478.

Registrations of British, community and foreign films

The following are details of films registered by the Department of Trade under the Films Acts 1960 to 1970, as amended by the European Communities Act 1972, during the week ended Friday, 15 June 1979.

BR/E indicates that the film is a British quota film, EC that the film is a quota film. The date which forms part of the registration number of each is the date on which quota life of the film expires.

Title of film	Registered no.	Playing time minutes	Date of registration	Registered in the name of	Maker's name
BRITISH					
UBU	BR/E 40073/16/6/84	20	12 June	Artificial Eye Film Co Ltd	Grand Slamm Animation and Arts Council of Great Britain
Resting Rough	BR/E 40075/16/6/84	26	14 June	Columbia-EMI-Warner Distributors Ltd	Thorntip Ltd
Raymond-Ching A Quality Called Jizz	BR/E 40076/16/6/84	22	14 June	ITC Film Distributors Ltd	Harrison Gore Films Ltd
FOREIGN					
Star Crash	F 40070	92	11 June	New World Pictures Ltd	New World Pictures Inc, California
Madame Rosa	F 40071	105	11 June	Selcroft International Films Ltd	Lira Films, Paris
Crossing The Rhine	F 40072	12	11 June	Miracle Films Ltd	General Films, Brussels
Players	F 40074	121	13 June	Cinema International Corporation (UK)	Robert Evans, California
The Evictors	F 40077	92	14 June	ITC Film Distributors Ltd	American International, California
The Champ	F 40078	123	15 June	Cinema International Corporation (UK)	MGM Inc, California
Tilt	F 40079	108	15 June	Barber Dann Films Ltd	Simon Film Productions Inc, California
King Solomon's Treasure	F 40080	86	15 June	Barber Dann Films Ltd	Canafox Inc, Montreal

CORRECTION TO THE REGISTER

The registration number of the film 'In Praise Of Older Women', registered on 20 February, has been corrected to BR/E 39944/25/2/84 and the makers name to RSL Films Ltd, Montreal.

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(a) annually (m) monthly (q) quarterly Weekly statistics are not included

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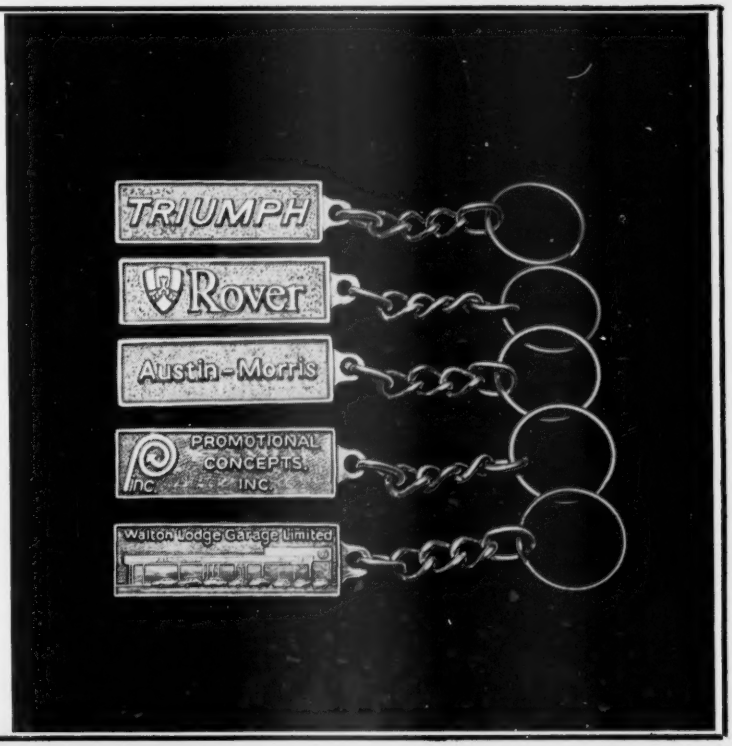

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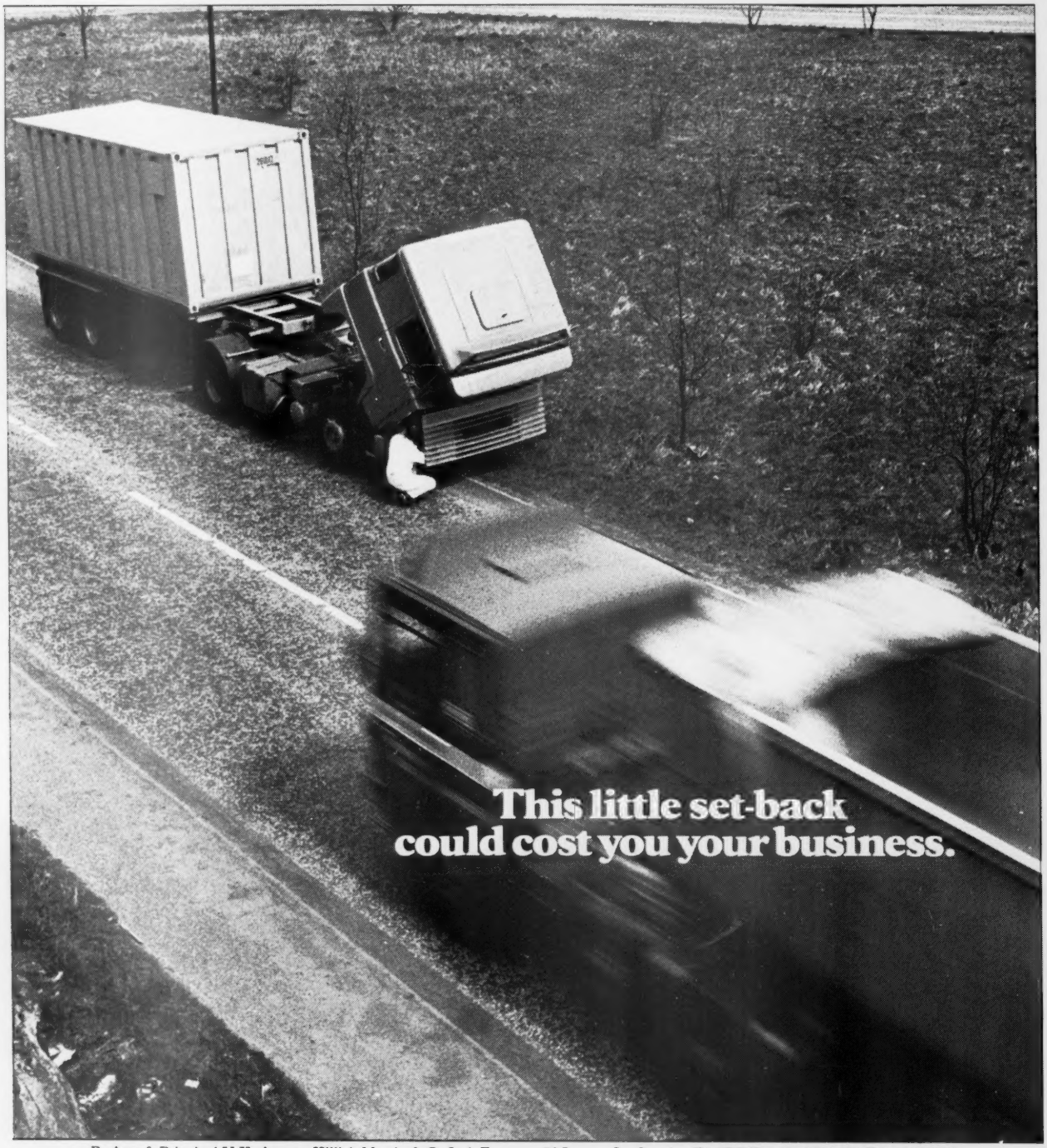

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